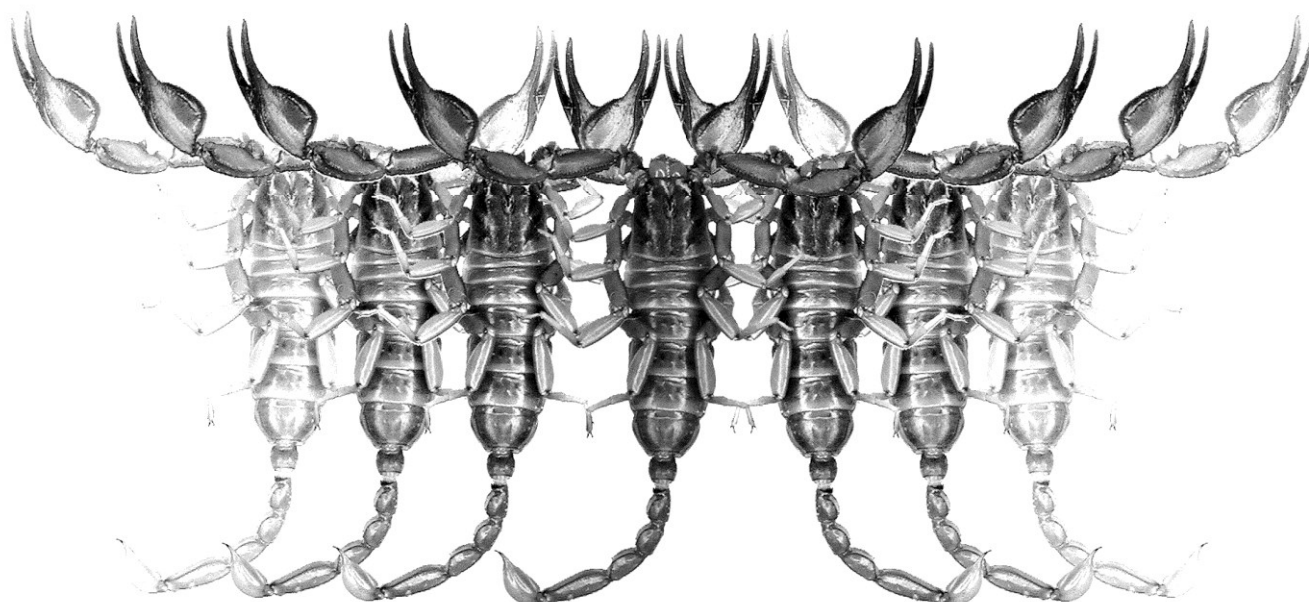


Euscorpius

Occasional Publications in Scorpiology



**Scorpions of Iran (Arachnida, Scorpiones). Part IX.
Hormozgan Province, with a Description of *Odontobuthus
tavighiae* sp. n. (Buthidae)**

**Shahrokh Navidpour, Michael E. Soleglad,
Victor Fet & František Kovařík**

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Euscorpius

Occasional Publications in Scorpiology

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Scorpions of Iran (Arachnida, Scorpiones). Part IX. Hormozgan Province, with a description of *Odontobuthus* *tavighiae* sp. n. (Buthidae)

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<http://zoobank.org/urn:lsid:zoobank.org:pub:5769EC41-F71E-48B6-B34F-BCCE090A069F>

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Summary

Twenty species of scorpions belonging to three families are reported from the Hormozgan Province of Iran. Of these, eight species and subspecies are recorded from the province for the first time: *Buthacus macrocentrus* (Ehrenberg, 1828), *Compsobuthus persicus* Navidpour et al., 2008, *Iranobuthus krali* Kovařík, 1997, *Mesobuthus eupeus persicus* (Pocock, 1899), *Mesobuthus phillipsii* (Pocock, 1889), *Odontobuthus bidentatus* Lourenço & Pérez, 2002, *Odontobuthus doriae* (Thorell, 1876), and *Razianus zarudnyi* (Birula, 1903). *Odontobuthus tavighiae* sp. n. is described and compared with all species of the genus *Odontobuthus* Vachon, 1950. *Paraorthochirus goyffoni* Lourenço et Vachon, 1995 is synonymized with *Orthochirus farzanpayi* (Vachon et Farzanpay, 1987). Also presented are keys to all species of scorpions found in the Hormozgan province and all species of the genus *Odontobuthus* Vachon, 1950.

Introduction

This paper continues a comprehensive province-by-province field study of the scorpion fauna of Iran by the RRLS team under Shahrokh Navidpour. The study includes documentation of biotope diversity, revisitation of previously known sites, some of them type localities, and sampling of all the encountered scorpion species. All specimens are collected with the help of UV light (night catch). However, no field work has been done on the islands belonging to the province. Hormozgan is one of the 31 provinces of Iran. It lies in the southern part of the country and is bordered by Fars and Kerman provinces in the north, Sistan and Baluchistan provinces in the east, Bushehr province in the west and Persian Gulf in the south. Hormozgan covers 70,697 km² (27,296 sq mi) and its provincial capital is Bandar Abbas. The province includes 14 islands in the Persian Gulf and 1,000 km (620 mi) of coastline. Eleven major cities are Bandar Abbas, Bandar Lengeh, Hajiabbad, Minab, Qeshm, Jask, Bastak, Bandar Khamir, Parsian, Rudan, and Abumusa. The province consists of 21 counties (districts) and 69 municipalities, and has 2,046 villages. The terrain is primarily mountainous, consisting of the southern tip of the Zagros Range. The climate is very hot, with summer temperatures some-

times exceeding 49°C. There is very little precipitation year round.

ABBREVIATIONS. The institutional abbreviations listed below and used throughout are mostly after Arnett et al. (1993).

BMNH – The Natural History Museum, London, United Kingdom;

FKCP – František Kovařík Collection, Praha, Czech Republic;

MCSN – Museo Civico di Storia Naturale “Giacomo Doria”, Genova, Italy;

MHNG – Muséum d’Histoire Naturelle, Geneva, Switzerland;

MNHN – Muséum National d’Histoire Naturelle, Paris, France;

NHMW – Naturhistorisches Museum Wien, Vienna, Austria;

RRLS – Razi Reference Laboratory of Scorpion Research, Razi Vaccine and Serum Research Institute, Sepah st., Hejrat sq., Ahvaz, Khoozestan, Iran;

ZISP – Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia;

ZMHB – Museum für Naturkunde der Humboldt-Universität zu Berlin, Berlin, Germany;

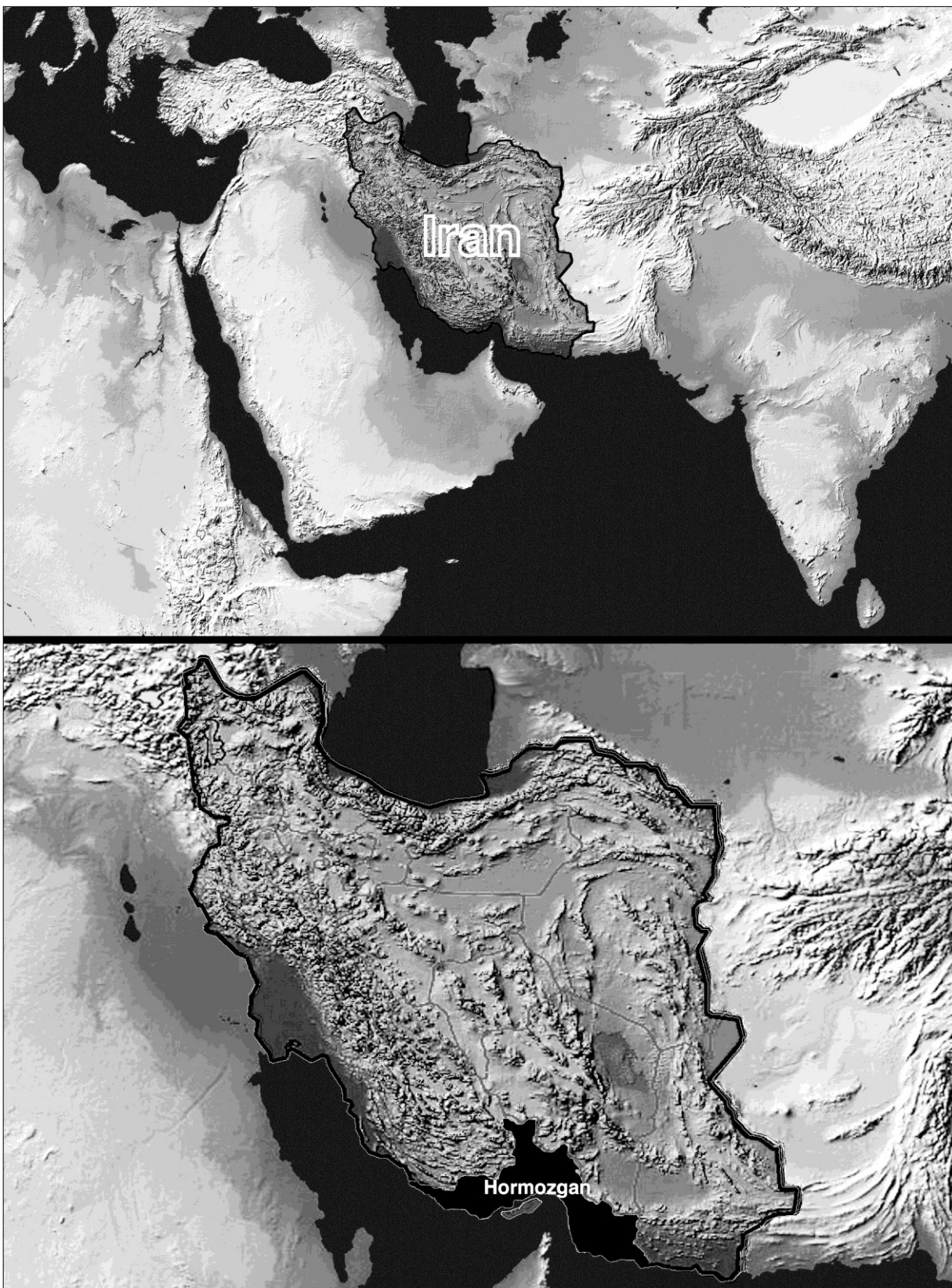


Figure 1: Map of southwestern Asia highlighting Iran (top) and closeup of Iran showing provinces, the Hormozgan Province depicted in black (bottom).

ZMUH – Zoologisches Institut und Zoologisches Museum, Universität Hamburg, Hamburg, Germany.

List of scorpions of Hormozgan Province

Family **Buthidae** C. L. Koch, 1837

Androctonus crassicauda (Olivier, 1807)

Buthacus macrocentrus (Ehrenberg, 1828) (first report)

Compsobuthus persicus Navidpour, Soleglad, Fet et Kovařík, 2008 (first report)

Compsobuthus plutenkoi Kovařík, 2003

Hottentotta sauleyi (Simon, 1880)

Iranobuthus krali Kovařík, 1997 (first report)

Mesobuthus eupeus persicus (Pocock, 1899) (first report)

Mesobuthus phillipsii (Pocock, 1889) (first report)

Odontobuthus bidentatus Lourenço et Pérez, 2002 (first report)

Odontobuthus doriae (Thorell, 1876) (first report)

Odontobuthus tavighiae sp. n.

Orthochirus farzanpayi (Vachon et Farzanpay, 1987)

Orthochirus stockwelli (Lourenço et Vachon, 1995)

Orthochirus varius Kovařík, 2004

Razianus zarudnyi (Birula, 1903) (first report)

Sassanidotus gracilis (Birula, 1900)

Family **Hemiscorpiidae** Pocock, 1893

Hemiscorpius acanthocercus Monod et Lourenço, 2005

Hemiscorpius enischnochela Monod et Lourenço, 2005

Hemiscorpius lepturus Peters, 1861

Family **Scorpionidae** Latreille, 1802

Nebo henjamicus Francke, 1980

Systematics

Family **Buthidae** C. L. Koch, 1837

Androctonus crassicauda (Olivier, 1807)
(Figs. 2–3)

Scorpio crassicauda Olivier, 1807: 97, pl. XLII, fig. 2.

Buthus crassicauda: Simon, 1872: 247 (in part); Simon, 1879: 99; Simon, 1892: 83; Kraepelin, 1899: 16; Pocock, 1902: 373; Kraepelin, 1913: 124; Lampe, 1918: 190.

Androctonus crassicauda: Kraepelin, 1891: 175 (in part); Vachon, 1951: 343; Khalaf, 1962: 1; Khalaf, 1963: 60; Habibi, 1971: 42; Farzanpay & Pretzmann, 1974: 215; Pérez Minocci, 1974: 17; Vachon, 1974: 909, fig. 40; Vachon, 1979: 31, figs. 1, 2, 4; Farzanpay, 1987: 141; Farzanpay, 1988: 36; Fet,

1989: 78; Al-Safadi, 1992: 96; Amr & El-Oran, 1994: 187; Sissom, 1994: 36; Dupré et al., 1998: 59; Kovařík, 1998: 104; Crucitti, 1999: 83; Kabakibi et al., 1999: 80, fig. 3; Fet & Lowe, 2000: 72; Stathi & Mylonas, 2001: 288; Crucitti & Vignoli, 2002: 439; Kovařík, 2002: 5; Fet & Kovařík, 2003: 180; Vignoli et al., 2003: 2; Kovařík & Whitman, 2005: 105; Lourenço, 2005: 149; Hendrixson, 2006: 38, figs. 1a–f, Pl. 1; Akbari, 2007: 76, fig. p. 62; Navidpour et al., 2008a: 5, figs. 5, 12, 44–45; Navidpour et al., 2008b: 3, figs. 4, 20, 25–28; Navidpour et al., 2008c: 3, figs. 2, 3, 8, 13–16; Navidpour et al., 2008d: 3, figs. 4, 9, 15–18; Pirali-Kheirabadi et al., 2009: 3, figs. 3–4, 12–15; Navidpour et al., 2010: 3, fig. 4; Navidpour et al., 2011: 3, figs. 4, 10, 17–20; Navidpour et al., 2012: 3, fig. 6.

Prionurus crassicauda: Pocock, 1895: 292; Tullgren, 1909: 2; Birula, 1904: 29; Birula, 1905a: 120; Masi, 1912: 91; Penther, 1912: 110.

Androctonus crassicauda crassicauda: Vachon, 1959: 124; Vachon, 1966: 210; Habibi, 1971: 42; Vachon, 1979: 34; Levy & Amitai, 1980: 23–29, figs. 30–34; Kovařík, 1997: 49.

= *Prionurus crassicauda orientalis* Birula, 1900: 355; Birula, 1903: 67 (syn. by Fet, 1989: 79).

Buthus (Prionurus) crassicauda orientalis: Birula, 1917: 93, 240.

Buthus crassicauda orientalis: Kraepelin, 1913: 124.

Androctonus crassicauda orientalis: Vachon, 1959: 124; Vachon, 1966: 210; Habibi, 1971: 42; Pérez Minocci, 1974: 18.

Androctonus amoreuxi baluchicus: Kovařík, 1997: 39 (see Vignoli et al., 2003: 4).

TYPE LOCALITY AND TYPE REPOSITORY. Kashan, Persia, now Iran, Esfahan Province; MNHN.

HORMOZGAN PROVINCE MATERIAL EXAMINED. **Iran**, Hormozgan Province, Beshagerd Mts., Davari Village, 26°27'N 57°38'E, 6–11.IV.2000, 1juv (FKCP), leg. V. Siniaev & A. Plutenko; Minab – Jask road, 26°04'49.3"N 57°17'57.2"E, 26 m a.s.l. (Locality No. HO-118), V.2009, 1♂ (RRLS), leg. Masihpour, Hayader and Habibzadeh; Lengeh Port, 27°08'06"N 55°49'17.5"E, 12 m a.s.l. (Locality No. HO-142), V.2009, 1♂ (RRLS) 1♀ (FKCP), leg. Masihpour, Hayader and Habibzadeh; 26°45'5"N 54°53'46.6"E, 94 m a.s.l. (Locality No. HO-145), V.2009, 1♂ (RRLS), leg. Masihpour, Hayader and Habibzadeh.

DISTRIBUTION: Widespread in Iran, found in most provinces. Recorded also from Armenia (Kraepelin, 1899: 17), Azerbaijan (Fet, 1989: 79), Bahrain (Crucitti & Vignoli, 2002: 439), Egypt (Fet & Lowe, 2000: 72), Iraq (Kennedy, 1937: 745), Israel (Simon, 1892: 83),

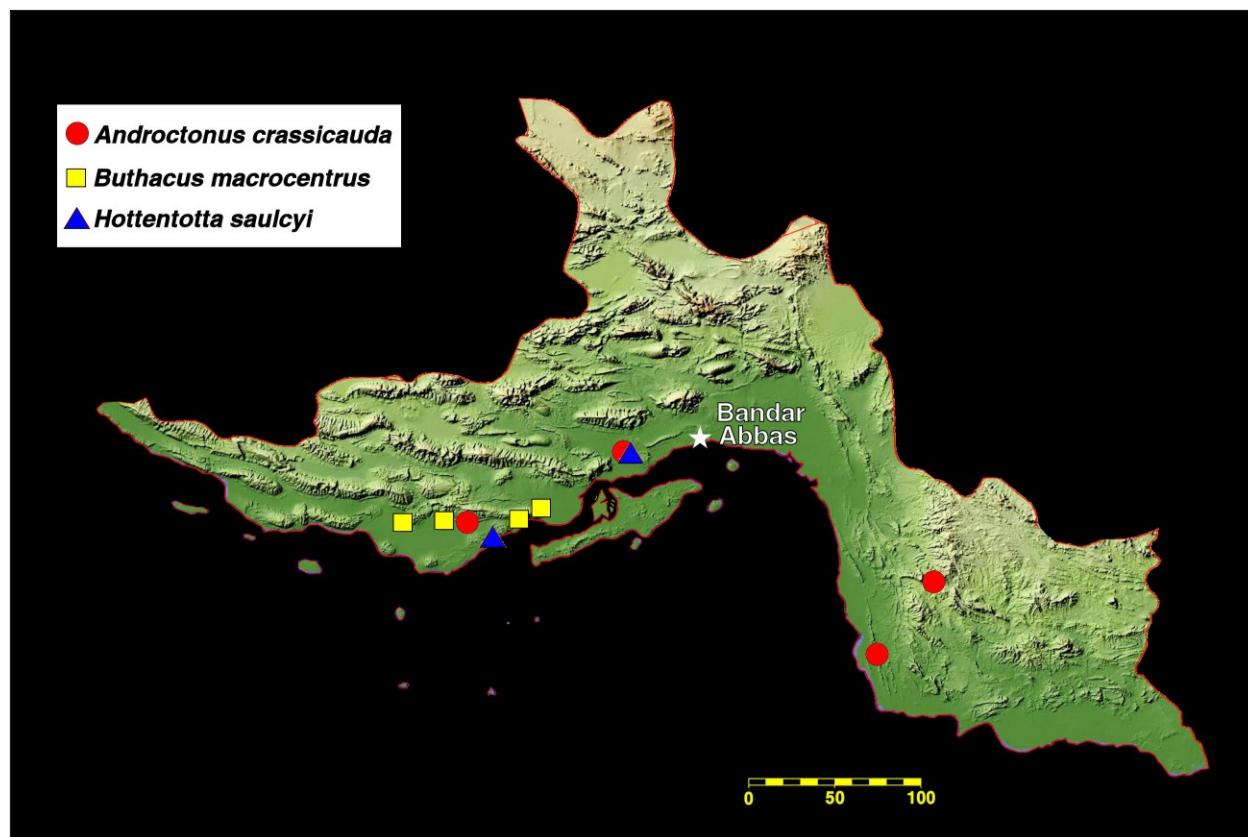


Figure 2: Map of Hormozgan Province showing distribution of *Androctonus crassicauda* (Olivier, 1807), *Buthacus macrocentrus* (Ehrenberg, 1828) and *Hottentotta saulcyi* (Simon, 1880) collected in this study.

Jordan (Amr & El-Oran, 1994: 187), Kuwait (Kettel, 1982: 6), Lebanon (El-Hennawy, 1992: 100), Oman (Birula, 1917: 229; Hendrixson, 2006: 39), Qatar (El-Hennawy, 1992: 100), Saudi Arabia (Pocock, 1895: 292; Hendrixson, 2006: 39), Syria (Simon, 1872: 247), Tunisia (Kraepelin, 1901: 266), Turkey (Pocock, 1902: 373), United Arab Emirates (Hendrixson, 2006: 40), and Yemen (Birula, 1937: 101).

***Buthacus macrocentrus* (Ehrenberg, 1828)**
(Figs. 2, 4)

Androctonus (Leiurus) macrocentrus Ehrenberg in Hemprich & Ehrenberg, 1828: pl. 1, fig. 6; Ehrenberg in Hemprich & Ehrenberg, 1829: 355 (in part); Hemprich & Ehrenberg, 1831: 5 (in part); Moritz & Fischer, 1980: 317 (in part); Braunwalder & Fet, 1998: 32 (in part).

Buthacus macrocentrus: Kovařík, 2005: 7; Navidpour et al., 2008a: 7, figs. 3, 6, 12, 56–59; Navidpour et al., 2008b: 5, figs. 4, 20, 53–56; Navidpour et al., 2008c: 5, figs. 2, 3, 8, 25–26; Kaltsas et al., 2008: 214; Yağmur et al., 2008: 16, figs. 2 and 4.

= *Buthus tadmoresis* Simon, 1892: 84; Kraepelin, 1895: 83; Birula, 1905a: 136; Habibi, 1971: 43 (syn. by Kovařík, 2005: 8).

Buthus (Buthacus) tadmoresis: Birula, 1910: 172; Birula, 1917: 229.

Buthacus tadmoresis: Simon, 1910: 76; Vachon, 1966: 210; Farzanpay, 1987: 144; Farzanpay, 1988: 36; Kovařík, 1997: 49; Kovařík, 1998: 105; Kovařík, 2001: 80; Fet & Kovařík, 2003: 180.

= *Buthus pietschmanni* Penther, 1912: 112, fig. on p. 113 (syn. by Birula, 1917: 229).

= *Buthacus yotvatensis* Levy, Amitai & Shulov, 1973: 130, figs. 32–37; Levy & Amitai, 1980: 90, figs. 82–85; Kinzelbach, 1984: 99; Vachon & Kinzelbach, 1987: 100; Fet & Lowe, 2000: 85; Crucitti & Vignoli, 2002: 439 (syn. by Kovařík, 2001: 80).

Buthacus yotvatensis yotvatensis: Vachon, 1979: 36; Fet & Lowe, 2000: 85.

Buthacus tadmoresis tadmoresis: Vachon & Kinzelbach, 1987: 101; Kovařík, 2002: 5;

Buthacus tadmoresis yotvatensis: Vachon & Kinzelbach, 1987: 101; Amr et al., 1988: 374; El-Hennawy, 1992: 114; Kabakibi et al., 1999: 82.

Mesobuthus pietschmanni: El-Hennawy, 1992: 128.



Figures 3–4: Iran, Hormozgan Province. **3.** Lengeh Port, 27°08'06"N 55°49'17.5"E, 12 m a.s.l. (Locality No. HO-142). Recorded occurrence of *Androctonus crassicauda* (Olivier, 1807), *Mesobuthus eupeus persicus* (Pocock, 1899), *Odontobuthus tavighiae* sp. n. and *Sassanidotus gracilis* (Birula, 1900). **4.** 26°45'57.3"N 54°46'31.4"E, 18 m a.s.l. (Locality No. HO-148). Recorded occurrence of *Buthacus macrocentrus* (Ehrenberg, 1828) and *Mesobuthus phillipsii* (Pocock, 1889).

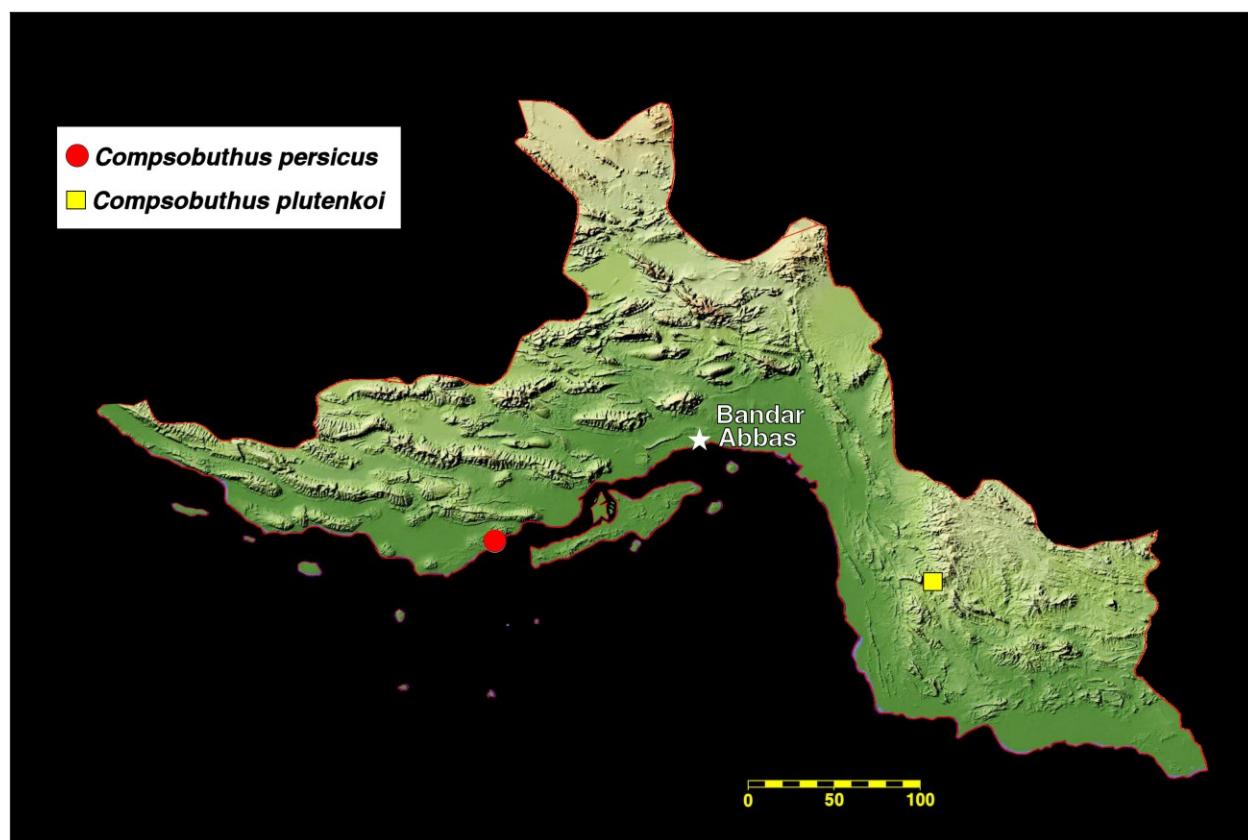


Figure 5: Map of Hormozgan Province showing distribution of *Compsobuthus persicus* Navidpour, Soleglad, Fet & Kovařík, 2008 and *Compsobuthus plutenkoi* Kovařík, 2003 collected in this study.

TYPE LOCALITY AND TYPE REPOSITORY. Sinai; ZMHB. Type locality “Sinai” (Ehrenberg in Hemprich & Ehrenberg, 1829: 355 and label) must be regarded as erroneous.

TYPE MATERIAL EXAMINED. Sinai (labeled as *Androctonus macrocentrus*, Sinai, No. 153), 1♀, lectotype of *Androctonus (Leiurus) macrocentrus* Ehrenberg in Hemprich & Ehrenberg, 1828, ZMHB.

HORMOZGAN PROVINCE MATERIAL EXAMINED. **Iran**, Hormozgan Province, 26°45'57.3"N 54°46'31.4"E, 18 m a.s.l. (Locality No. HO-148), XI.2008, 4♂4♀ (RRLS) 1♂ (FKCP), leg. Masihipour & Hayader; 26°45'14.9"N 54°31'44.3"E, 30 m a.s.l. (Locality No. HO-149), XI.2008, 2♂2ims. (RRLS), leg. Masihipour, Bahrani & Habibzadeh; 26°46'36.6"N 55°13'59.2"E, 5 m a.s.l. (Locality No. HO-152), XI.2008, 1♂ (FKCP) 3ims. (RRLS), leg. Masihipour, Hayader & Habibzadeh; 45 km. to Khamir Port (Bandare Khamir), 26°50'41.2"N 55°22'06.9"E, 17 m a.s.l. (Locality No. HO-153), XI.2008, 4♀4ims. (RRLS) 1♀ (FKCP), leg. Masihipour, Hayder & Bahrani.

DISTRIBUTION: Iran, Bushehr (Kovařík, 2005: 8, as “Chamak Province”), Hormozgan (first report), Ilam

(Navidpour et al., 2008c: 5), and Khoozestan Province (Navidpour et al., 2008a: 7) Provinces; Iraq (Penther, 1912: 112), Israel (Vachon, 1966: 210), Jordan (Pérez Minocci, 1974: 19), Syria (Simon, 1892: 84), Turkey (Crucitti & Vignoli, 2002: 439).

Compsobuthus persicus Navidpour, Soleglad, Fet et Kovařík, 2008
(Fig. 5)

Compsobuthus persicus Navidpour et al., 2008b: 9, figs. 2, 5, 7, 9–15, 16–18, 19, 37–40; Navidpour et al., 2012: 6, fig. 7.

TYPE LOCALITY AND TYPE REPOSITORY. Iran, Bushehr Province, Borazjan, Dalaki, 29°23'27"N 51°16'00"E, 100 m a.s.l.; RRLS and FKCP.

TYPE MATERIAL EXAMINED. **Iran**, Bushehr Province, Borazjan, Dalaki, 29°23'27"N 51°16'00"E, 100 m a.s.l. (Locality No. Bu-19), XI.2007, 1♂2♀(holotype and paratypes) (RRLS), 1♂(paratype) (FKCP), leg. Masihipour & Bahrani; Borazjan, 29°16'56"N 51°15'26"E, 200 m a.s.l. (Locality No. Bu-18), II.2007, 2♀(paratypes) (FKCP), leg. Masihipour, Bahrani & Habibzadeh; Dayer, 27°49'35"N 52°04'44"E, 4 m a.s.l. (Locality No.

Bu-25), XI.2007, 1♀(paratype) (RRLS), leg. Masihipour, Bahrani & Habibzadeh; Tangestan, Ahram, 28°51'45"N 51°20'50"E, 123 m a.s.l. (Locality No. Bu-36), XI.2007, 1♂2♀(paratypes) (RRLS), 1im. (paratype) (FKCP), leg. Masihipour, Bahrani & Habibzadeh; Tangestan to Farashband, 29°52'49"N 51°22'31"E, 227 m a.s.l. (Locality No. Bu-37), XI.2007, 2♂4♀ (paratypes) (RRLS) 2♀(paratypes) (FKCP), leg. Masihipour, Bahrani & Habibzadeh; Deylam road, Khite Amareh Village, 30°42'52"N 49°44'59"E, 41 m a.s.l. (Locality No. OM-801), VII.2007, 1♂(paratype) (RRLS), leg. Navidpour, Masihipour & Habibzadeh.

HORMOZGAN PROVINCE MATERIAL EXAMINED. **Iran**, Hormozgan Province, Bandar Abbas to Lengeh Port road, 26°40'40.2"N 55°04'07.4"E, 17 m a.s.l. (Locality No. HO-150), XI.2008, 1♂ (FKCP), leg. Masihipour & Bahrani.

DISTRIBUTION: Iran, eastern Bushehr (Pocock, 1899: 404), Fars (Navidpour et al., 2012: 6), and Hormozgan (first report) Provinces.

Compsobuthus plutenkoi Kovařík, 2003
(Fig. 5)

Compsobuthus plutenkoi Kovařík, 2003: 100, figs. 2, 3, and 10; Vignoli, 2005: 85; Kovařík & Ahmed, 2007: 6.

TYPE LOCALITY AND TYPE DEPOSITORY. Iran, Hormozgan Province, Beshagerd Mts., Davari Village, 26°27'N 57°38'E; FKCP.

TYPE MATERIAL EXAMINED. **Iran**, Hormozgan Province, Beshagerd Mts., Davari Village, 26°27'N 57°38'E, 6-11.IV.2000, 1♀ (holotype) (FKCP), leg. V. Siniaev & A. Plutenko.

DISTRIBUTION: Iran, Hormozgan Provinces (Kovařík, 2003: 100).

Hottentotta saulcyi (Simon, 1880)
(Fig. 2)

Buthus saulcyi Simon, 1880a: 378; Simon, 1880b: 29; Kraepelin, 1899: 18; Kraepelin, 1901: 267; Weidner, 1959: 99.

Buthus (Hottentotta) saulcyi: Birula, 1905a: 136; Birula, 1917: 214; Birula, 1918: 30; Vachon, 1940: 255.

Buthotus saulcyi: Vachon, 1949: 147 (1952: 233); Vachon, 1959: 134; Pringle, 1960: 79, fig. 5; Khalaf, 1962: 2; Khalaf, 1963: 64; Vachon, 1966: 210; Vachon & Stockmann, 1968: 91; Habibi, 1971: 43; Pérez Minocci, 1974: 21; Farzanpay, 1987: 148; Farzanpay, 1988: 37; El-Hennawy, 1992: 118;

Kovařík, 1992: 183; Dupré et al., 1998: 70; Akbari et al., 1997: 112; Akbari, 2007: 76, fig. p. 63.

Hottentotta saulcyi: Kovařík, 1997: 40; Crucitti & Vignoli, 2002: 446, figs. 8–10; Karataş, 2003: 315; Vignoli et al., 2003: 4; Kovařík, 2007: 61, figs. 17, 95–99; Navidpour et al., 2008b: 13, figs. 2, 22, 29–32; Navidpour et al., 2008c: 8, figs. 9, 17–20; Navidpour et al., 2008d: 5, figs. 4, 7, 19–22; Pirali-Kheirabadi et al., 2009: 6, figs. 9, 16–19; Navidpour et al., 2010: 10, figs. 5, 15; Karataş et al., 2012: 113.

Hottentotta (Hottentotta) saulcyi: Kovařík, 1998: 110; Fet & Lowe, 2000: 143.

Buthus hottentotta: Kraepelin, 1891: 185 (in part).

TYPE LOCALITY AND TYPE REPOSITORY. Iraq, Mosul; MNHN, ZMUH.

HORMOZGAN PROVINCE MATERIAL EXAMINED. **Iran**, Hormozgan Province, Bandar Abbas to Lengeh Port road, 26°40'N 55°04'E, 1♀ (FKCP), leg. Akbari (No. 696); Lengeh, 27°08'N 55°49'E, 2♀ (FKCP), leg. Akbari (No. 1164).

DISTRIBUTION: Iran, known from Kermanshah (formerly Bachtaran), Fars, Hamadan, Hormozgan, Ilam, Lorestan (Kovařík, 2007: 65), Bushehr and Khoozestan (Akbari, 2007: 76, Akbari et al., 1997: 112), Kohgiluyeh & Boyer Ahmad (Navidpour et al., 2008d: 5), and Chahar Machal & Bakhtiyari (Pirali-Kheirabadi et al., 2009: 6) Provinces; Afghanistan (Kovařík, 1997: 40), Iraq (Simon, 1880a: 379), Turkey (Crucitti & Vignoli, 2002: 446).

Iranobuthus krali Kovařík, 1997
(Fig. 6)

Iranobuthus krali Kovařík, 1997: 45, figs. 4–10, 15; Kovařík, 1998: 111; Fet & Lowe, 2000: 145; Vignoli et al., 2003: 2; Fet et al., 2005: 12; Navidpour et al., 2012: 9, figs. 4, 6, 9, 19 and 24.

TYPE LOCALITY AND TYPE REPOSITORY. Iran, Fars Province, 10 km E of Sivand, 30°05'N 52°55'E, ca 1700 m a.s.l.; FKCP.

TYPE MATERIAL EXAMINED. **Iran**, Fars Province, 10 km E of Sivand, 30°05'N 52°55'E, ca 1700 m a.s.l., 29.-30.IV.1996, 1♂ (holotype) (FKCP), leg. D. Král.

HORMOZGAN PROVINCE MATERIAL EXAMINED. **Iran**, Hormozgan Province, Bandar Abbas to Lengeh Port road, 26°40'N 55°04'E, 1im. (FKCP), leg. Akbari (No. 177).

DISTRIBUTION: Iran, Fars (Kovařík, 1997: 45), Hormozgan (first report) and Qom (Karataş et al., 2012: 114).

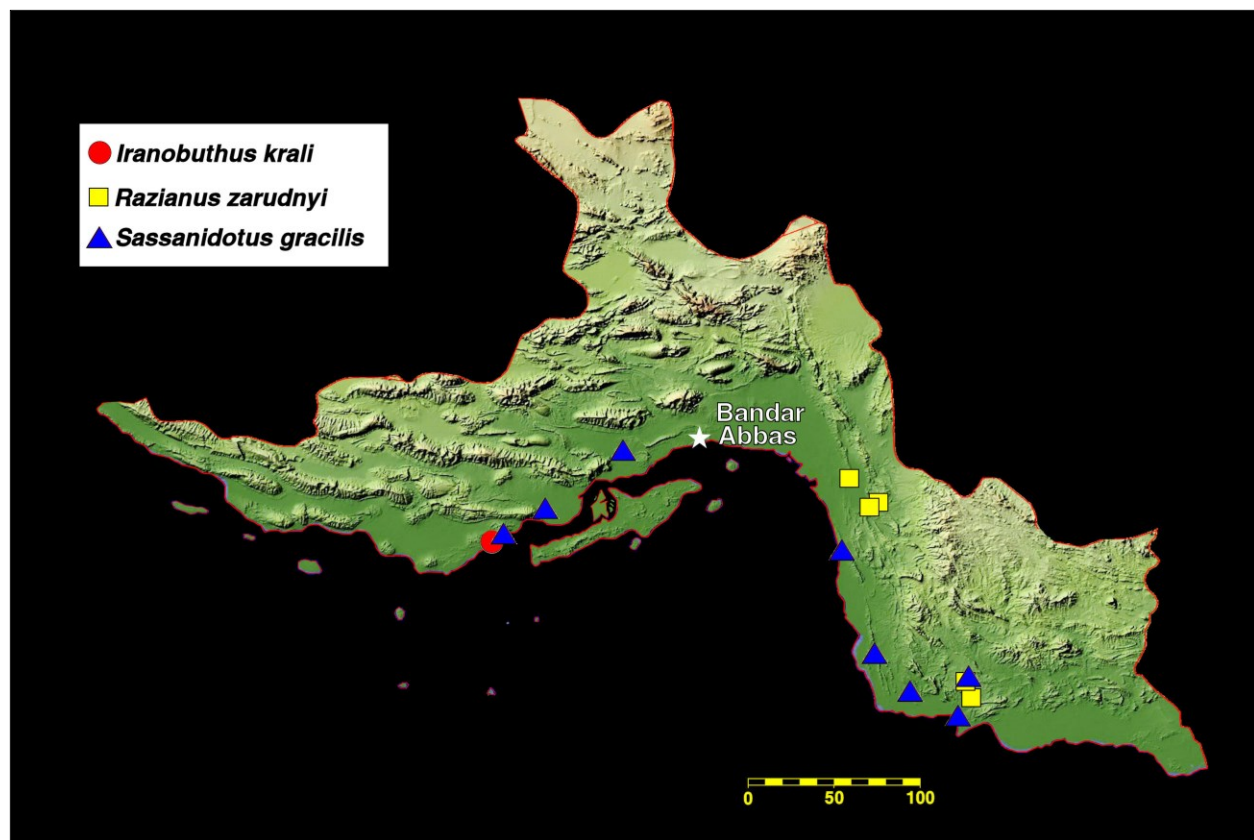


Figure 6: Map of Hormozgan Province showing distribution of *Iranobuthus krali* Kovařík, 1997, *Razianus zarudnyi* (Birula, 1903) and *Sassanidotus gracilis* (Birula, 1900) collected in this study.

Mesobuthus eupeus persicus (Pocock, 1899)
(Figs. 3, 7–9, 36)

Buthus caucasicus persicus Pocock, 1899: 404; Pocock, 1900: 19.

Buthus eupeus persicus: Birula, 1905a: 119, 122, 124–126; Birula, 1918: 10–13, figs. 1–2, 6.

Mesobuthus eupeus persicus: Vachon, 1959: 155, fig. 37; Vachon, 1966: 212; Habibi, 1971: 44; Farzanpay, 1988: 38; Fet, 1994: 527; Kovařík, 1997: 49; Kovařík, 1998: 114; Fet & Lowe, 2000: 174; Navidpour et al., 2011: 9, figs. 2, 6, 12, 41–44; Navidpour et al., 2012: 10, figs. 10 and 22.

Mesobuthus caucasicus persicus: Pérez Minocci, 1974: 25; Capes & Fet, 2001: 303.

= ?*Buthus eupeus kirmanensis* Birula, 1900: 364 (see Fet & Lowe, 2000: 173).

Buthus (Buthus) eupeus kirmanensis: Birula, 1917: 239; Birula, 1918: 14.

Mesobuthus eupeus kirmanensis: Vachon, 1959: 155; Vachon, 1966: 212; Habibi, 1971: 43; Farzanpay, 1988: 38; Fet, 1994: 527; Kovařík, 1997: 49; Kovařík, 1998: 114; Fet & Lowe, 2000: 173; Mirshamsi et al., 2011: 9.

= ?*Buthus pachysoma* Birula, 1900: 370 (syn. by Navidpour et al., 2011: 9).

Buthus eupeus pachysoma: Birula, 1905a: 128.

Buthus (Buthus) eupeus pachysoma: Birula, 1917: 239.

Mesobuthus eupeus pachysoma: Vachon, 1959: 155; Vachon, 1966: 212; Habibi, 1971: 43; Farzanpay, 1988: 38; Fet, 1994: 527; Kovařík, 1997: 49; Kovařík, 1998: 114; Fet & Lowe, 2000: 174.

TYPE LOCALITY AND TYPE REPOSITORY. Persia, now Iran, East Azarbaijan, Seir, E side of Lake Urmia (Urmi); BMNH.

TYPE MATERIAL EXAMINED. **Iran**, East Azarbaijan Province, Seir, Lake Urmi, 1♀ lectotype, BMNH No. 1900.1,15.

HORMOZGAN PROVINCE MATERIAL EXAMINED. **Iran**, Hormozgan Province, Minab to Sandrak road, 26°59' 35.8"N 57°09'46.1"E, 58 m a.s.l. (Locality No. HO-111), IV.2008, 2♂ (RRLS), leg. Masihipour, Bahrani & Habibzadeh; 26°51'02.9"N 57°15'27"E, 57 m a.s.l. (Locality No. HO-112), IV.2008, 4♂4♀ (RRLS), leg. Masihipour, Bahrani & Habibzadeh; 26°51'57.3"N 57°19'13.8"E, 112 m a.s.l. (Locality No. HO-113), IV.



Figures 7–8: Iran, Hormozgan Province, 7. Shahre Babak, Jask to Bashagard road, 25°50'53.1"N 57°50'40.7"E, 178 m a.s.l. (Locality No. HO-120). Recorded occurrence of *Mesobuthus eupeus persicus* (Pocock, 1899), *Odontobuthus doriae* (Thorell, 1876), *Orthochirus varius* Kovařík, 2004 and *Razianus zarudnyi* (Birula, 1903). 8. Minab-Bandare Jask road, 27°25'03"N 56°59'42.3"E, 240 m a.s.l. (Locality No. HO-117), IV.2008, 3♂ (RRLS), leg. Masihpour, Bahrani & Habibzadeh. Recorded occurrence of *Mesobuthus eupeus persicus* (Pocock, 1899) and *Hemiscorpius lepturus* Peters, 1861.

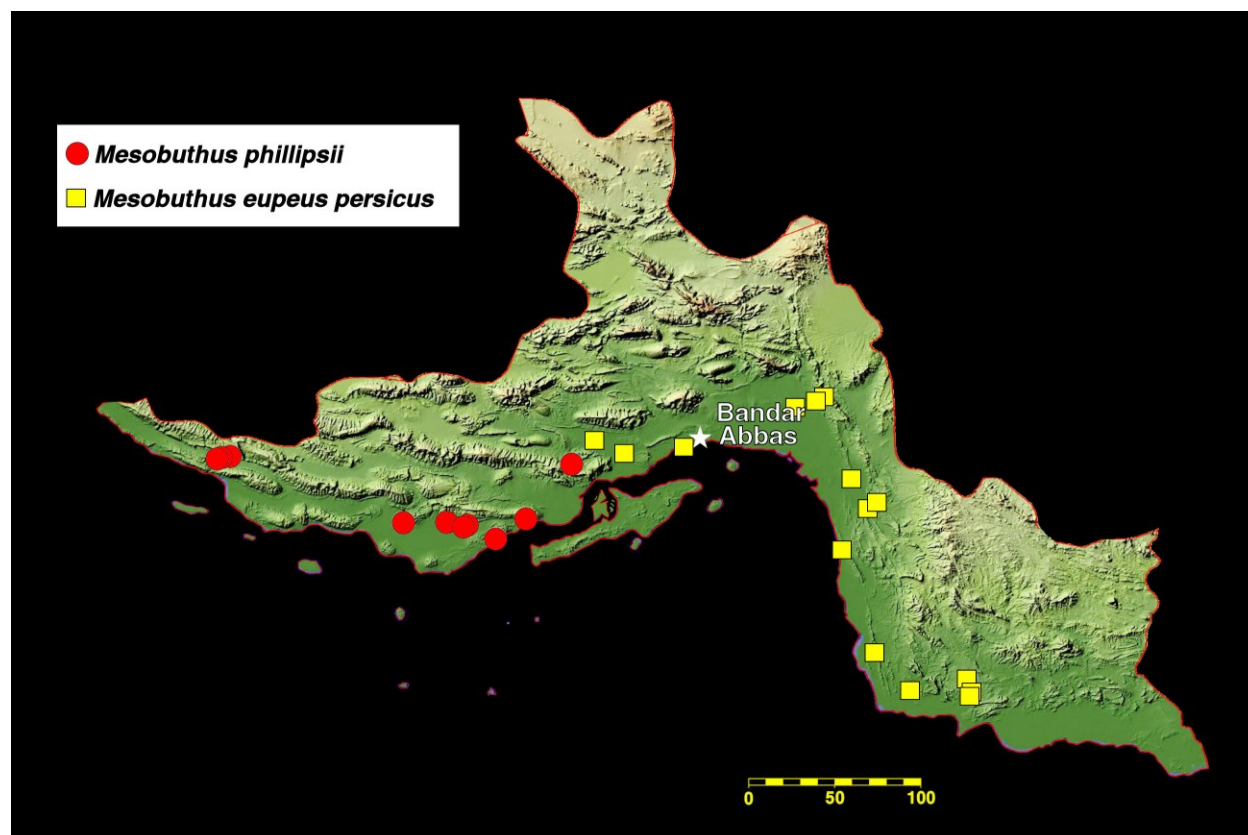


Figure 9: Map of Hormozgan Province showing distribution of *Mesobuthus phillipsii* (Pocock, 1889) and *Mesobuthus eupeus persicus* (Pocock, 1899) collected in this study.

2008, 2♂ (RRLS), 1♂ (FKCP) (leg. Mashipour, Bahrani & Habibzadeh; Minab to Radan road, 27°24'08"N 56°56'31.9"E, 75 m a.s.l. (Locality No. HO-116), IV.2008, 1juv. (FKCP), leg. Mashipour, Bahrani & Habibzadeh; Minab-Bandare Jask road, 27°25'03"N 56°59'42.3"E, 240 m a.s.l. (Locality No. HO-117), IV.2008, 3♂ (RRLS), leg. Mashipour, Bahrani & Habibzadeh; Minab to Jask road, 26°04'49.3"N 57°17'57.2"E, 26 m a.s.l. (Locality No. HO-118), V.2009, 1♂ (FKCP), leg. Mashipour, Hayader and Habibzadeh; Bandare Jask to Bashagard road, 25°50'11.4"N 57°50'14.6"E, 146 m a.s.l. (Locality No. HO-119), V.2008, 1♂ (RRLS) 1♀ (FKCP), leg. Mashipour, Bahrani & Habibzadeh; Shahre Babak, Jask to Bashagard road, 25°50'53.1"N 57°50'40.7"E, 178 m a.s.l. (Locality No. HO-120), V.2008, 3♂10♀ (RRLS) 1♂1♀ (FKCP), leg. Mashipour, Bahrani & Habibzadeh; Jask to Bashagard road, 25°55'18.4"N 57°49'42.3"E, 274 m a.s.l. (Locality No. HO-121), V.2008, 2♂ (RRLS) 2 juvs. (FKCP), leg. Mashipour, Bahrani & Habibzadeh; Jask to Minab road, 25°52'34.9"N 57°29'47.4"E, 46 m a.s.l. (Locality No. HO-126), V.2008, 1♀ (FKCP), leg. Mashipour, Bahrani & Habibzadeh; Jask to Minab road, 26°37'30.7"N 57°05'43"E, 18 m a.s.l. (Locality No. HO-129), V.2008, 3♂4♀6 ims. (RRLS), leg. Mashipour, Bahrani & Hab-

ibzadeh; Radan to Bandar Abbas road, 27°22'50.7"N 56°50'07.8"E, 36 m a.s.l. (Locality No. HO-130), V.2008, 5♀3♂ (RRLS) 1♂1♀ (FKCP), leg. Mashipour, Bahrani & Habibzadeh; Bandar Abbas to Bastak road, 27°12'01.4"N 55°40'04.3"E, 20 m a.s.l. (Locality HO-131), V.2008, 3♂4♀ (RRLS) 2♀ (FKCP), leg. Mashipour, Bahrani & Habibzadeh; Bandar Abbas to Bandar Lengeh road, 27°09'55.6"N 56°11'08.8"E, 3 m a.s.l. (Locality HO-140), V.2008, 1♂ (FKCP), leg. Mashipour, Bahrani & Habibzadeh; Lengeh Port, 27°08'06"N 55°49'17.5"E, 12 m a.s.l. (Locality No. HO-142), V.2009, 3♂4♀ (RRLS), leg. Mashipour, Hayader & Habibzadeh.

COMMENTS. Specimens from Hormozgan Province available to us for study are mostly smaller, usually reaching 35 to 50 mm (including telson). Some of them have relatively narrower metasoma reminding of *Mesobuthus macmahoni* (Pocock, 1900), from which they differ in the shape of the chela, especially the males. Determining the relationship of these two taxa will need further work.

DISTRIBUTION: Iran, East Azarbaijan (Pocock, 1899: 404), Fars (Navidpour et al., 2012: 11), Kerman, Sistan

& Baluchistan (Birula, 1900: 364; Fet & Lowe, 2000: 173), Hormozgan (first report), and Yazd (Mirshamsi et al., 2011: 9) Provinces; Pakistan (Pocock, 1900: 20).

***Mesobuthus phillipsii* (Pocock, 1889)**
(Figs. 4, 9, 37)

Buthus phillipsii Pocock, 1889: 341, pl. XV, fig. 6; Weidner, 1959: 99.

Buthus phillipsi: Kraepelin, 1899: 24; Birula, 1905a: 131; Borelli, 1915: 460; Werner, 1916: 80; Lampe, 1918: 191.

Mesobuthus phillipsi: Vachon, 1950: 153 (1952: 325); Pérez Minocci, 1974: 25; Mirshamsi et al., 2011: 15.

Buthus (Buthus) eupeus phillipsi: Birula, 1917: 228.

Mesobuthus eupeus phillipsi: Vachon, 1959: 148; Vachon, 1966: 213; Habibi, 1971: 44; Farzanpay, 1986: 334; Fet, 1994: 527; Kovařík, 1997: 49; Kovařík, 1998: 114; Fet & Lowe, 2000: 175.

Mesobuthus eupeus phillipsii: Farzanpay, 1987: 150; Farzanpay, 1988: 38; Navidpour et al., 2008a: 11, figs. 22, 81–84; Navidpour et al., 2008b: 13, figs. 2–3, 5, 21–22, 49–52; Navidpour et al., 2008c: 11, figs. 4, 7–9, 37–40; Navidpour et al., 2008d: 5, figs. 2–3, 5–9, 35–38; Pirali-Kheirabadi et al., 2009: 6, figs. 5, 10, 32–35; Navidpour et al., 2010: 13, fig. 19; Kovařík et al., 2011: 5, figs. 12–15, 17–18, 21–22, 24–26; Navidpour et al., 2012: 12, figs. 2, 10, 21 and 23.

Mesobuthus eupeus: Akbari, 2007: 76.

Buthus hottentotta: Kraepelin, 1891: 185 (part?).

= *Buthus eupaeus mesopotamicus* Penther, 1912: 111 (syn. by Kovařík, et al., 2011: 5).

TYPE LOCALITY AND TYPE REPOSITORY. Iran, Bushir (now Bushehr) Province; BMNH.

HORMOZGAN PROVINCE MATERIAL EXAMINED. **Iran**, Hormozgan Province, Lengeh Port, 26°44'46.8"N 54°53'01.7"E, 30 m a.s.l. (Locality No. HO-144), V.2009, 1♂ (FKCP), leg. Mashipour, Hayader and Habibzadeh; 26°45'5"N 54°53'46.6"E, 94 m a.s.l. (Locality No. HO-145), V.2009, 2♂2♀ (RRLS) 1♂1♀ (FKCP), leg. Mashipour, Hayader and Habibzadeh; 26°45'57.3"N 54°46'31.4"E, 18 m a.s.l. (Locality No. HO-148), XI.2008, 6♂5♀ (RRLS) 2♂2♀ (FKCP), leg. Mashipour & Hayader; 26°45'14.9"N 54°31'44.3"E, 30 m a.s.l. (Locality No. HO-149), XI.2008, 2♂ (RRLS), leg. Mashipour, Bahrani & Habibzadeh; Bandar Abbas to Lengeh Port road, 26°40'40.2"N 55°04'07.4"E, 17 m a.s.l. (Locality No. HO-150), XI.2008, 1juv. (FKCP), leg. Mashipour & Bahrani; 26°46'36.6"N 55°13'59.2"E, 5 m a.s.l. (Locality No. HO-152), XI.2008, 1♀ (FKCP), leg. Mashipour, Hayader & Habibzadeh; 27°04'41.0"N 55°29'54.3"E, 219 m a.s.l. (Locality No. HO-155), XI.2008,

1♀2juvs. (FKCP), leg. Mashipour, Hayader & Habibzadeh; Parsian to Lamerd road, 27°05'15.7"N 53°29'26.2"E, 235 m a.s.l. (Locality No. HO-156), XI.2008, 4♂5♀ (RRLS) 2♂ (FKCP), leg. Mashipour, Hayader & Habibzadeh; Parsian to Bandar Lengeh road, 27°05'08.2"N 53°26'22.5"E, 200 m a.s.l. (Locality No. HO-157), XI.2008, 4♂ (RRLS), leg. Mashipour, Hayader & Habibzadeh; Parsian to Lamerd road, 27°05'52.3"N 53°23'23.2"E, 168 m a.s.l. (Locality No. HO-158), XI.2008, 1♂7♀ (RRLS), 1♂1♀ (FKCP), leg. Mashipour, Hayader & Habibzadeh.

DISTRIBUTION: Iran, Bushehr (Pocock, 1889: 341), Chahar Machal & Bakhtiyari (Pirali-Kheirabadi et al., 2009: 6), Esfahan (Kovařík et al., 2011: 6), Fars (Kovařík et al., 2011: 6), Hormozgan (first report) Ilam (Akbari, 2007: 76), Khozestan (Navidpour et al., 2008a: 9), Kohgiluyeh & Boyer Ahmad (Kovařík, 1997), and Lorestan (Navidpour et al., 2010: 13) Provinces; Iraq (Vachon, 1966: 213; Fet & Lowe, 2000: 175); Turkey, Adiyaman, Diyarbakir, Gaziantep, Kahramanmaraş, Kilis, Mardin, Şanlıurfa, and Şırnak Provinces (Kovařík et al., 2011: 8-10).

***Odontobuthus bidentatus* Lourenço et Pézier, 2002**
(Figs. 10, 39)

Odontobuthus odonturus: Habibi, 1971: 44 (in part); Farzanpay, 1987: 155; Farzanpay, 1988: 39; Kovařík, 1997: 47; Kovařík, 1998: 115 (in part); Fet & Lowe, 2000: 188 (in part); Akbari, 2007: 76.

Odontobuthus bidentatus Lourenço & Pézier, 2002: 118; Navidpour et al., 2008a: 13; Navidpour et al., 2008b: 15; Navidpour et al., 2008c: 11; Navidpour et al., 2008d: 9, figs. 2, 5, 27–30; Lowe, 2010: 13, figs. 31–32, 43–48, 58–59, 65; Karataş et al., 2012: 116; Navidpour et al., 2012: 14, figs. 2, 4–5, 11 and 26.

TYPE LOCALITY AND TYPE REPOSITORY. Iraq, 180 km north of Bagdad, Khanagin-Dyala; MHNG.

HORMOZGAN PROVINCE MATERIAL EXAMINED. **Iran**, Hormozgan Province, Parsian to Bandare road, 27°04'17.3"N 53°329'02.6"E, 210 m a.s.l. (Locality No. HO-154), XI.2008, 1♂2♀12 juvs. (RRLS), leg. Mashipour, Hayader & Habibzadeh; 27°04'41.0"N 55°29'54.3"E, 219 m a.s.l. (Locality No. HO-155), XI.2008, 3♂2♀2 juvs. (RRLS) 1juv. (FKCP), leg. Mashipour, Hayader & Habibzadeh; Parsian to Lamerd road, 27°05'15.7"N 53°29'26.2"E, 235 m a.s.l. (Locality No. HO-156), XI.2008, 1♂1juv. (RRLS), leg. Mashipour, Hayader & Habibzadeh; Parsian to Bandare road, 27°05'08.2"N 53°26'22.5"E, 200 m a.s.l. (Locality No. HO-157), XI.2008, 1♂4♀4 juvs. (RRLS), leg. Mashipour, Hayader & Habibzadeh; Parsian to Lamerd road,

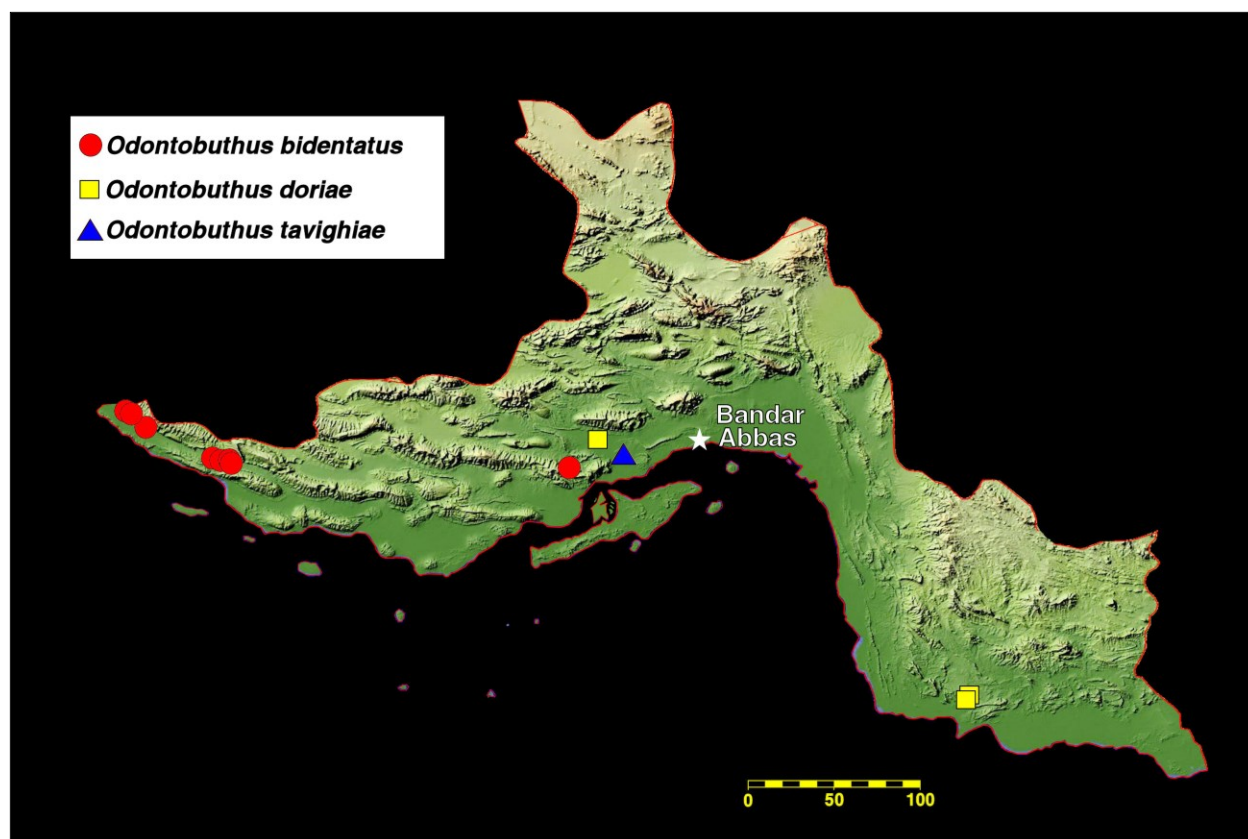


Figure 10: Map of Hormozgan Province showing distribution of *Odontobuthus bidentatus* Lourenço & Pérez, 2002, *Odontobuthus doriae* (Thorell, 1876) and *Odontobuthus tavighiae* sp. n. collected in this study.

27°05'52.3"N 53°23'23.2"E, 168 m a.s.l. (Locality No. HO-158), XI.2008, 1♂3♀ (RRLS), leg. Masihipour, Hayader & Habibzadeh; Parsian to Kangan road, 27°19'42.4"N 52°51'19"E, 24 m a.s.l. (Locality No. HO-159), XI.2008, 1♂2♀ (RRLS), leg. Masihipour, Hayader & Habibzadeh; 27°19'09.3"N 52°52'37.1"E, 25 m a.s.l. (Locality No. HO-160), XI.2008, 3♂4♀ (RRLS) 1♀ (FKCP), leg. Masihipour, Hayader & Habibzadeh; 27°15'11.5"N 52°59'10.4"E, 14 m a.s.l. (Locality No. HO-161), XI.2008, 1♀ (RRLS), leg. Masihipour, Hayader & Habibzadeh.

DISTRIBUTION: Iran, Bushehr (Lourenço & Pérez, 2002: 118), Fars (Navidpour et al., 2012: 14), Hormozgan (first report), Khoozestan (Navidpour et al., 2008a: 13), Ilam (Navidpour et al., 2008c: 11), Kohgiluyeh & Boyer Ahmad (Navidpour et al., 2008d: 9) Provinces; Iraq (Lourenço & Pérez, 2002: 118).

Odontobuthus doriae (Thorell, 1876)
(Figs. 7, 10, 38)

Buthus doriae Thorell, 1876: 107; Kraepelin, 1891: 57–58, pl. I, fig. 6, 10; Kraepelin, 1899: 27.

Odontobuthus doriae: Pringle, 1960: 83; Khalaf, 1963: 66; Vachon, 1966: 213; Habibi, 1971: 44; Pérez Minocci, 1974: 28; Farzanpay, 1988: 39; Kovařík, 1997: 47; Kovařík, 1998: 115; Fet & Lowe, 2000: 187; Kovařík, 2002: 9; Lourenço & Pérez, 2002: 116; Vignoli et al., 2003: 4; Pirali-Kheirabadi et al., 2009: 9, figs. 10, 24–27; Navidpour et al., 2011: 13, figs. 5, 8, 13, 21–24; Karataş et al., 2012: 116; Navidpour et al., 2012: 14, figs. 11 and 25.

TYPE LOCALITY AND TYPE REPOSITORY. Iran, Teheran; MCSN.

HORMOZGAN PROVINCE MATERIAL EXAMINED. **Iran,** Hormozgan Province, Bandare Jask to Bashagard road, 25°50'11.4"N 57°50'14.6"E, 146 m a.s.l. (Locality No. HO-119), V.2008, 1♂ (RRLS) 1♀ (FKCP), leg. Masihipour, Bahrani & Habibzadeh; Shahre Babak, Jask to Bashagard road, 25°50'53.1"N 57°50'40.7"E, 178 m a.s.l. (Locality No. HO-120), V.2008, 1♀ (RRLS) 1♀ (FKCP), leg. Masihipour, Bahrani & Habibzadeh; Bandar Abbas to Bastak road, 27°12'01.4"N 55°40'04.3"E, 20 m a.s.l. (Locality HO-131), V.2008, 3♂4♀ (RRLS), leg. Masihipour, Bahrani & Habibzadeh.

DISTRIBUTION: Iran, Esfahan, Fars, Hamadan, Kerman, Kermanshah, Mazandaran, Markazi, Teheran, West Azarbaijan, Yazd (Kovářik, 1997: 47, Lourenço & Pézier, 2002: 116, 117, 124), Chahar Machal & Bakhtiyari (Pirali-Kheirabadi et al., 2009: 10), Hormozgan (first report), and Sistan & Baluchistan (Pirali-Kheirabadi et al., 2009: 14) Provinces.

***Odontobuthus tavighiae* Navidpour, Soleglad,**

Fet et Kovářik, sp. n.

(Figs. 3, 10, 13–23)

<http://zoobank.org/urn:lsid:zoobank.org:act:EF157C0A-9C20-449D-BD16-D55AD9290C95>

TYPE LOCALITY AND TYPE REPOSITORY. **Iran**, Hormozgan Province, Lengeh Port, 27°08'06"N 55°49'17.5"E, 12 m a.s.l. (Locality No. HO-142); FKCP and RRLS.

TYPE MATERIAL. **Iran**, Hormozgan Province, Lengeh Port, 27°08'06"N 55°49'17.5"E, 12 m a.s.l. (Locality No. HO-142), V.2009, 1♂ (holotype) 1♀ (paratype) (FKCP), 1♂1♀ (paratypes) (RRLS), leg. Masihpour, Hayader and Habibzadeh

ETYMOLOGY. Named after Mitra Tavighi, a student of medical entomology in Kerman (Sirjan University).

DIAGNOSIS. Total length of adults 49.8–52.5 mm. Dorsal trichobothria of femur arranged in *beta*-configuration, orthobothriotaxic. Cheliceral fixed finger with two ventral denticles. Third and fourth legs with tibial spurs. Tergites I–II bear five carinae and tergites III–VI bear three carinae. Pectines with fulcra. Pectinal teeth number 31–32 in males and 21–22 in females. Color generally yellow, with only a few dark zones on carapace, tergites and sternites. Chelicerae yellowish brown, without reticulation. Pedipalps and metasoma sparsely hirsute. Movable finger of pedipalp with 11–12 rows of granules and with 7–8 terminal granules of which 4–5 form an apical row. Ventral carinae of second and third metasomal segments with two pairs of strong teeth. Anal arch with three strong, long and conical lateral lobes. All metasomal segments longer than wide. Telson bulbous, with aculeus shorter than vesicle.

DESCRIPTION. The total length of adults is 49.8–52.5 mm. Sexual dimorphism is not readily apparent; the width of pedipalp chela is the same in both sexes, and there is no difference between males and females in the length of pedipalps and metasomal segments; differences are only in pectines and the genital operculum. Chelicerae are yellowish, without reticulation, the tips of teeth on cheliceral fingers are black. For the position and distribution of trichobothria see Figs. 17–20.

COLORATION. Generally yellow with only a few dark zones on the carapace, tergites and sternites. Tergites

and sternites have greenish to gray spots in the anterior parts, but posterior and lateral margins are yellow. Only the seventh tergite can be entirely dark. The metasoma, telson, pedipalps and legs are yellow. Only the fifth metasomal segment may be darker.

MESOSOMA AND CARAPACE. The carapace is carinate and bears several solitary granules (Fig. 15). Tergites I–II bear five carinae, tergites III–VI bear three carinae, and are granulated. Tergite VII is pentacarinata. The pectinal tooth count is 31–32 in males and 21–22 in females. The pectinal marginal tips extend nearly to one-quarter of the sixth sternite in males and one-half of the fourth sternite in females. The pectines have three marginal lamellae and six (female) to eight (male) middle lamellae. The lamellae bear numerous long, dark setae, each fulcrum with three to five setae. All sternites are finely granulated (male) or smooth (female) and sparsely hirsute. The fourth to seventh sternites bear four granulated (male) or obsolete (female) carinae. The third sternite bears two carinae.

PEDIPALPS. The pedipalps bear sparse long setae. The femur bears three to four granulated carinae and its dorsal surface is weakly granulated in males and without granules in females. The patella bears eight carinae, most of them granulated. The chela is without carinae and smooth. The movable and fixed fingers of pedipalps bear 11–12 rows of granules, and the movable finger also has 7–8 terminal granules of which 4–5 form an apical row.

LEGS. The tarsomeres bear two rows of macrosetae on the ventral surface and numerous macrosetae on the other surfaces, which on legs I–III form bristle combs. The femur and patella may bear four to six carinae, which may be granulate.

METASOMA AND TELSON. All metasomal segments are sparsely hirsute and longer than wide. Segments I–II bear 10 carinae, segment II bears 8 or 10 carinae, segment IV bears 8 carinae, and segment V bears 5 carinae. All metasomal segments are finely granulated (male) or smooth (female), with bigger granules confined to the ventral surface of the fifth segment. All carinae are granulated, without pigmentation. Antero-ventral margins of the second to fourth metasomal segments each bear a transverse row of 6 to 8 enlarged granules. Ventral carinae of the second and third metasomal segments bear two pairs of strong teeth (Fig. 23). The anal arch has three strong conical and three reduced lateral lobes, and two strong conical and three to four reduced ventral lobes. Ventrolateral carinae on the fifth metasomal segment bear three strong, lobate and conical granules. The telson is smooth and bulbous, with the aculeus shorter than the vesicle and sparsely hirsute.

MEASUREMENTS IN MM. Total length of male holotype 51.2; carapace length 6.1, width 6.4; metasoma and telson length 31.6; first metasomal segment length 3.9, width 3.5; second metasomal segment length 4.5, width

3.2; third metasomal segment length 4.65, width 3.1; fourth metasomal segment length 5.6, width 2.85; fifth metasomal segment length 6.7, width 2.75; telson length 6.2; telson depth 2.75; pedipalp femur length 5.25, width 1.55; pedipalp patella length 6.15, width 2.15; chela length 10.7; manus width 2.1; movable finger length 7.45.

Total length of female paratype 52.5; carapace length 6.1, width 6.7; metasoma and telson length 30.4; first metasomal segment length 4, width 3.4; second metasomal segment length 4.3, width 3.2; third metasomal segment length 4.25, width 3.05; fourth metasomal segment length 5.45, width 2.85; fifth metasomal segment length 6.4, width 2.7; telson length 5.95; telson depth 2.7; pedipalp femur length 5.12, width 1.75; pedipalp patella length 6.5, width 2.35; chela length 11.3; manus width 2.3; movable finger length 7.9.

AFFINITIES. The described features distinguish *O. tavighiae* **sp. n.** from all other species of the genus. They are recounted in the key below. The occurrence and morphology make the new species close to *O. bidentatus* Lourenço et Pérezier, 2002, which is bigger (60–70 mm) than *O. tavighiae* **sp. n.** (50–52.5 mm), has the movable finger of pedipalp with 13–14 rows of granules (*O. tavighiae* **sp. n.** has 11–12 rows), and its lateral lobes on the fifth and third metasomal segments are differently shaped (Fig. 23 versus Fig. 39).

Key to species of *Odontobuthus* Vachon, 1950

1. Anal arch with two lateral lobes.....
..... *O. doriae* (Thorell, 1876) (Iran, ?Iraq).
- Anal arch with three lateral lobes. 2
2. Ventral carinae of third metasomal segment with two pairs of denticles (Fig. 39). 3
- Ventral carinae of third metasomal segment with three (Fig. 38) or more pairs of denticles. 4
3. Total length 60–70 mm. Movable finger of pedipalp with 13–14 rows of granules. Anal arch with three strong, wide and rounded lateral lobes (Fig. 39). First metasomal segment wider than long or as long as wide, at least in males.....
..... *O. bidentatus* Lourenço et Pérezier, 2002 (Iran, Iraq).
- Total length 50–52.5 mm. Movable finger of pedipalp with 11–12 rows of granules (Fig. 16). Anal arch with three strong, long and conical lateral lobes (Fig. 23). First metasomal segment longer than wide in both sexes.
..... *O. tavighiae* **sp. n.**
4. Ventral anal arch with two enlarged triangular denticles.....*O. brevidigitus* Lowe, 2010 (Oman).
- Ventral anal arch without two enlarged triangular denticles. 5

5. Movable finger of pedipalp with 12–13 oblique rows of granules. Metasomal segment IV with transverse row of eight or more enlarged granules.....
..... *O. sp.n.* (Iran; in press by Mirshamsi et al.).
- Movable finger of pedipalp with 10–11 oblique rows of granules; metasomal segment IV with transverse row of six or fewer enlarged granules.....
..... *O. odonturus* (Pocock, 1897) (India, Pakistan).

Orthochirus farzanpayi (Vachon et Farzanpay, 1987)
(Figs. 11, 32)

Simonoides farzanpayi Vachon et Farzanpay in Farzanpay, 1987: 162; Farzanpay, 1988: 41; Fet & Lowe, 2000: 223.

Orthochirus farzanpayi: Kovařík & Fet, 2006a: 1, figs. 1–3; Navidpour et al., 2008a: 14; Navidpour et al., 2008b: 15, figs. 2, 23, 61–64; Navidpour et al., 2011: 15, figs. 14, 53–56; Navidpour et al., 2012: 16, fig. 12.

= *Orthochirus sobotniki* Kovařík, 2004: 20 (syn. by Kovařík & Fet, 2006a: 1).

= *Paraorthochirus goyffoni* Lourenço et Vachon, 1995: 301; Fet & Lowe, 2000: 212. **Syn. n.**

TYPE LOCALITY AND TYPE REPOSITORY. Iran, 215 km N of Bandar-e-Abbas; NHMW.

TYPE MATERIAL EXAMINED. Iran, 215 km N of Bandar-e-Abbas, 22.III.1972, 1♀ (lectotype) 1♂1♀ (paralectotypes) (NHMW Nos. 68–70, rev. Max Vachon in 1977, No. VA 1910); 5 km SE of Posht Chenar, 19–20 April 2000, 29°12.941'N 53°20.014'E, 1692 m a.s.l., 1♂1♀1im. ♂ (holotype, allotype, and paratype of *Orthochirus sobotniki*) (FKCP), leg. J. Šobotnik.

HORMOZGAN PROVINCE MATERIAL EXAMINED. **Iran**, Hormozgan Province, 27°15'11.5"N 52°59'10.4"E, 14 m a.s.l. (Locality No. HO-161), XI.2008, 1♂1im. (FKCP), leg. Masihipour, Hayader & Habibzadeh.

COMMENTS. *Paraorthochirus goyffoni* was not compared with *Orthochirus farzanpayi* in the original description, it was differentiated only from *Paraorthochirus* (= *Orthochirus*) *glabrifrons* (Kraepelin, 1903) and *Paraorthochirus* (= *Orthochirus*) *stockwelli* Lourenço et Vachon, 1995. The presence or absence of trichobothrium *d*₂ on the femur of pedipalp was the only character separating *Orthochirus* Karsch, 1892 from *Paraorthochirus* Lourenço et Vachon, 1995. Navidpour et al. (2008: 17) demonstrated variation in the position, size, and presence/absence of trichobothrium *d*₂ on the femur of pedipalp, synonymized these two genera and transferred the species *O. glabrifrons* and *O. stockwelli* to *Orthochirus*. At that time they did not address the taxonomic position of *Paraorthochirus goyffoni*, which

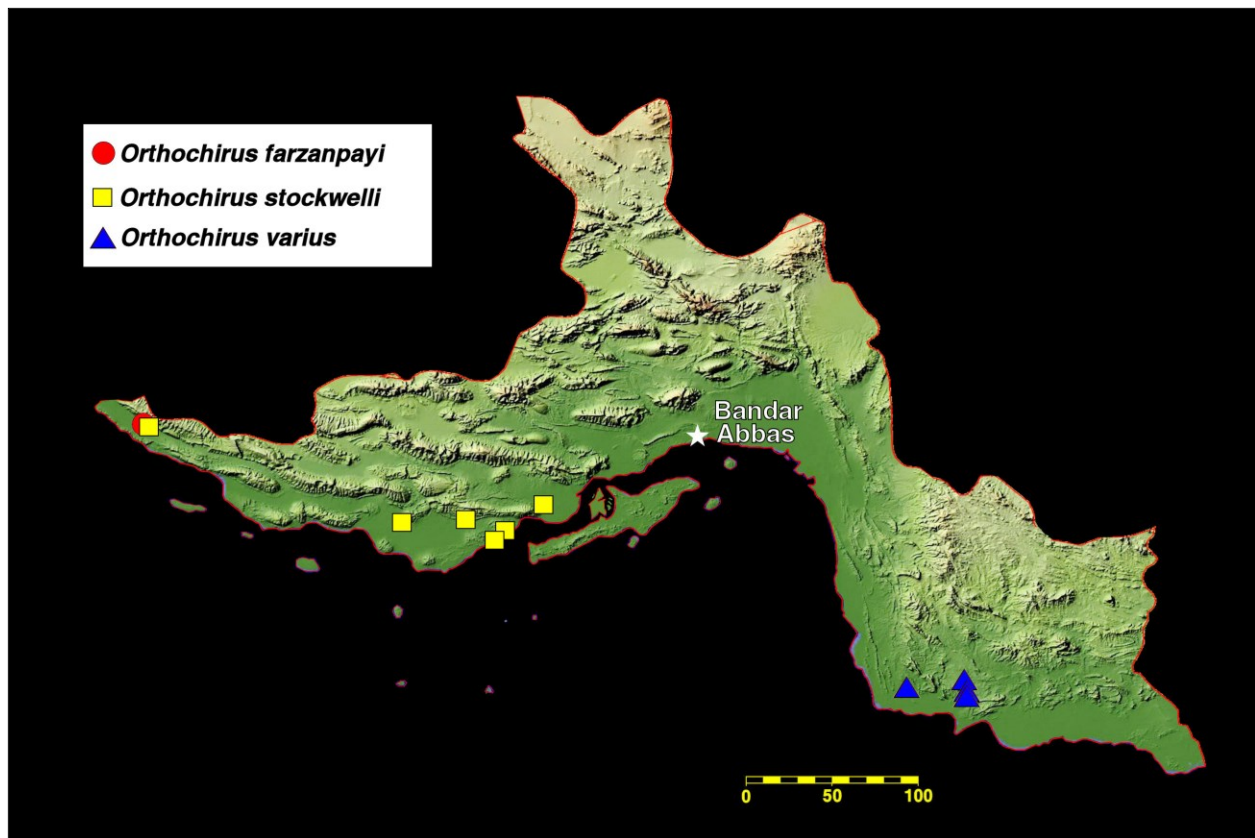


Figure 11: Map of Hormozgan Province showing distribution of *Orthochirus farzanpayi* (Vachon & Farzanpay, 1987), *Orthochirus stockwelli* (Lourenco & Vachon, 1995) and *Orthochirus varius* Kovařík, 2004 collected in this study.

is possible only now with new material of *Orthochirus* from Hormozgan Province. Comparison of the new specimens with characters given in the original description reveals no morphological differences and leads us to conclude that *Paraorthochirus goyffoni* Lourenco et Vachon, 1995 is a synonym of *Orthochirus farzanpayi* (Vachon et Farzanpay, 1987).

DISTRIBUTION: Iran, Hormozgan, Fars (Kovařík & Fet, 2006a: 1–3), Khoozestan (Navidpour et al., 2008a: 15), Bushehr (Navidpour et al., 2008b: 15) and Kerman (Navidpour et al., 2011: 15) Provinces.

Orthochirus stockwelli (Lourenco et Vachon, 1995)
(Figs. 11, 34–35)

Paraorthochirus stockwelli Lourenco & Vachon, 1995: 299, figs. 1, 4–10; Lourenco & Vachon, 1997: 329, fig. 1B; Kovařík, 1997: 50; Kovařík, 1998: 117; Lourenco & Huber, 2000: 143; Fet & Lowe, 2000: 212; ? Kovařík & Fet, 2006a: 9, fig. 9.

Orthochirus stockwelli: Navidpour et al., 2008a: 20, figs. 2, 31, 101–102; Navidpour et al., 2008b: 17, figs. 6, 23, 69–72.

TYPE LOCALITY AND TYPE REPOSITORY. Iran, Hormozgan Province, Bandar-Abbas; MNHN.

HORMOZGAN PROVINCE MATERIAL EXAMINED. **Iran**, Hormozgan Province, 12 km W Faryab (NE Bandar Abbas), 1♂ (FKCP), 27.-28.IV.2002, leg. M. Johanides; Bandareh to Bastak road; 26°38'34.8"N 54°53'52.4"E, 50 m a.s.l. (Locality No. HO-143), V.2009, 2♂ (RRLS), leg. Mashipour, Hayader and Habibzadeh; 26°45'5"N 54°53'46.6"E, 94 m a.s.l. (Locality No. HO-145), V.2009, 2♀ (RRLS), leg. Mashipour, Hayader and Habibzadeh; 26°45'14.9"N 54°31'44.3"E, 94 m a.s.l. (Locality No. HO-149), V.2009, 2♂ (RRLS), leg. Mashipour, Hayader & Habibzadeh; Bandar Abbas to Lengeh Port road, 26°40'40.2"N 55°04'07.4"E, 17 m a.s.l. (Locality No. HO-150), XI.2008, 2♂ FKCP, leg. Mashipour & Bahrani; 26°42'36.6"N 55°08'11"E, 20 m a.s.l. (Locality No. HO-151), XI.2008, 2♀ (RRLS), leg. Mashipour & Bahrani; 45 km to Khamir Port (Bandare Khamir), 26°50'41.2"N 55°22'06.9"E, 17 m a.s.l. (Locality No. HO-153), XI.2008, 1♂ RRLS, leg. Mashipour, Hayder & Bahrani.

DISTRIBUTION: Iran, Bushehr (Navidpour et al., 2008b: 17), Hormozgan (Lourenco & Vachon, 1995: 299), and Khoozestan (Navidpour et al., 2008a: 20) Provinces.

***Orthochirus varius* Kovařík, 2004**
(Figs. 7, 11, 33)

Orthochirus varius Kovařík, 2004: 21; Kovařík & Fet, 2006a: 8.

TYPE LOCALITY AND TYPE REPOSITORY. Iran, Hormozgan Province, Beshagerd Mts., Davari Village, 26°27'N 57°38'E; FKCP.

TYPE MATERIAL EXAMINED. **Iran**, Hormozgan Province, Beshagerd Mts., Davari Village, 26°27'N 57°38'E, 6-11.IV.2000, 3♀ (allotype and paratypes) 5♂ (holotype and paratypes) (FKCP), leg. V. Siniaev & A. Plutenko.

HORMOZGAN PROVINCE MATERIAL EXAMINED. **Iran**, Hormozgan Province, Bandare Jask to Bashagard road, 25°50'11.4"N 57°50'14.6"E, 146 m a.s.l. (Locality No. HO-119), V.2008, 1♂ (RRLS) 1♀ (FKCP), leg. Masihpour, Bahrani & Habibzadeh; Shahre Babak, Jask to Bashagard road, 25°50'53.1"N 57°50'40.7"E, 178 m a.s.l. (Locality No. HO-120), V.2008, 2♀ (RRLS) 1♂1♀ (FKCP), leg. Masihpour, Bahrani & Habibzadeh; Jask to Bashagard road, 25°55'18.4"N 57°49'42.3"E, 274 m a.s.l. (Locality No. HO-121), V.2008, 1♂1 im. (RRLS) 1♂1 im. (FKCP), leg. Masihpour, Bahrani & Habibzadeh; Jask to Minab road, 25°52'34.9"N 57°29'47.4"E, 46 m a.s.l. (Locality No. HO-126), V.2008, 1juv. (FKCP), leg. Masihpour, Bahrani & Habibzadeh.

DISTRIBUTION. Iran (Hormozgan Province).

***Razianus zarudnyi* (Birula, 1903)**
(Fig. 6)

Hemibuthus zarudnyi Birula, 1903: 75; Vachon, 1966: 211.

Razianus zarudnyi: Farzanpay, 1987: 159; Farzanpay, 1988: 41; Fet & Lowe, 2000: 216; Akbari, 2007: 76, fig. p. 66; Navidpour et al., 2008a: 20, figs. 42, 89–92; Navidpour et al., 2008b: 17, figs. 2, 5, 23, 57–60; Navidpour et al., 2008c: 14, figs. 2, 4, 10, 58–61; Navidpour et al., 2008d: 11, figs. 3, 9, 13, 47–50; Pirali-Kheirabadi et al., 2009: 10, figs. 2, 11, 40–43; Navidpour et al., 2010: 15; Karataş et al., 2012: 117; Navidpour et al., 2012: 17, figs. 2–4, 12.

= *Buthus zarudnianus* Birula, 1905a: 144; Birula, 1905b: 450; Kraepelin, 1913: 127; Vachon, 1966: 211; Habibi, 1971: 43 (syn. by Fet, 1997: 66).

= *Neohemibuthus kinzelbachi* Lourenço, 1996: 94, figs. 2–8; Kovařík, 1997: 49 (syn. by Fet, 1997: 66).

Neohemibuthus zarudnyi: Fet, 1997: 65; Kovařík, 1998: 115.

TYPE LOCALITY AND TYPE REPOSITORY. “Persia, Kalagan Province, Beludjistan, and Geh Provinces, Makran”,

now Sistan & Baluchistan Province, Iran (Fet, 1977); ZISP.

HORMOZGAN PROVINCE MATERIAL EXAMINED. **Iran**, Hormozgan Province, Minab to Sandrak road, 26°59'35.8"N 57°09'46.1"E, 58 m a.s.l. (Locality No. HO-111), IV.2008, 2♂ (RRLS), leg. Masihpour, Bahrani & Habibzadeh; 26°51'02.9"N 57°15'27"E, 57 m a.s.l. (Locality No. HO-112), IV.2008, 4♂4♀ (RRLS), leg. Masihpour, Bahrani & Habibzadeh; 26°51'57.3"N 57°19'13.8"E, 112 m a.s.l. (Locality No. HO-113), IV.2008, 1♀ (FKCP), leg. Masihpour, Bahrani & Habibzadeh; Shahre Babak, Jask to Bashagard road, 25°50'53.1"N 57°50'40.7"E, 178 m a.s.l. (Locality No. HO-120), V.2008, 3♂ (RRLS), leg. Masihpour, Bahrani & Habibzadeh; Jask to Bashagard road, 25°55'18.4"N 57°49'42.3"E, 274 m a.s.l. (Locality No. HO-121), V.2008, 2♂ (RRLS) 1♀ (FKCP), leg. Masihpour, Bahrani & Habibzadeh.

DISTRIBUTION: Iran, Bushehr (Akbari, 2007: 76), Chahar Machal & Bakhtiyari (Fet, 1997: 67), Fars (Fet, 1997: 68), Hormozgan (first report), Ilam (Akbari, 2007: 76), Khozestan (Lourenço, 1996: 94; Fet, 1997: 67–68), Kohgiluyeh & Boyer Ahmad (Navidpour et al., 2008d: 11), Lorestan (Navidpour et al., 2010: 15), and Sistan & Baluchistan (Fet, 1997: 66) Provinces.

***Sassanidotus gracilis* (Birula, 1900)**
(Figs. 3, 6)

Buthus zarudnyi gracilis Birula, 1900: 368.

Buthus (Buthus) zarudnyi gracilis: Birula, 1917: 240

Mesobuthus zarudnyi gracilis: Vachon, 1959: 141–146, figs. 23–26, 28–29, 31, 51; Vachon, 1966: 213; Habibi, 1971: 44; Farzanpay, 1988: 39; Kovařík, 1998: 115.

Sassanidotus zarudnyi gracilis: Fet & Lowe, 2000: 223.

Sassanidotus gracilis: Kovařík & Fet, 2006b: 4, figs. 2, 6–9; Navidpour et al., 2011: 17, figs. 2, 15, 16, 45–48; Kovařík & Ojanguren Affilastro, 2013: 212.

= *Buthus zarudnyi sarghadensis* Birula, 1903: 70–71 (syn. by Kovařík & Fet, 2006b: 6)

Buthus (Buthus) zarudnyi sarghadensis: Birula, 1917: 240.

Mesobuthus zarudnyi sarghadensis: Vachon, 1959: 141, fig. 31; Vachon, 1966: 213; Habibi, 1971: 44; Farzanpay, 1988: 39; Kovařík, 1998: 115.

Sassanidotus zarudnyi sarghadensis: Fet & Lowe, 2000: 223.

= *Buthus zarudnianus* Birula, 1905a: 144; Birula, 1905b: 450; Kraepelin, 1913: 127; Vachon, 1966: 211; Habibi, 1971: 43 (syn. by Fet, 1997: 66).

= ?*Buthus gabrielis* Werner, 1929: 244 (syn. by Navidpour et al., 2011: 18).

Mesobuthus grabielis: Vachon, 1950: 153 (1952: 325); Vachon, 1966: 213; Habibi, 1971: 44; Farzanpay, 1988: 39.

Mesobuthus vesiculatus: Fet & Lowe, 2000: 180 (in part).

= *Compsobuthus becvari* Kovařík, 2003a: 89; Kovařík & Ahmed, 2007: 5 (syn. by Kovařík & Ojanguren Affilastro, 2013: 212).

= *Compsobuthus kaskai* Kovařík, 2003a: 94; Vignoli, 2005: 85; Kovařík & Ahmed, 2007: 5 (syn. by Kovařík & Ojanguren Affilastro, 2013: 212).

= *Compsobuthus sobotniki* Kovařík, 2003a: 103; Vignoli, 2005: 85; Kovařík & Ahmed, 2007: 6 (syn. by Kovařík & Ojanguren Affilastro, 2013: 212).

TYPE LOCALITY AND TYPE REPOSITORY. Nasirabad, Seistan, eastern Persia, now Iran; ZISP.

TYPE MATERIAL EXAMINED. Iran, Sistan & Baluchistan Province, Nasirabad, Seistan, eastern Persia, 1♀ (holotype), coll. N. A. Zarudny (ZISP No. 598); between Djuan-kan and Mirkala (Kala-i-mir), Mashkil and Djalak, Baluchistan, eastern Persia, 26–29 January 1901, 1♀1juv. (lectotype and paralectotype of *Buthus zarudnyi sarghadensis*), coll. N. A. Zarudny (ZISP No. 1356); between Mirkuh and Rik-i-malik, Sargad, Baluchistan, eastern Persia, 14–19 January 1901, 2♀4juvs. (paralectotypes of *Buthus zarudnyi sarghadensis*), coll. N. A. Zarudny (ZISP No. 1355); Hormozgan Province, Kargushki, 26°04.353'N 57°18.293'E, 10 m a.s.l., 18.IV.2000, 1♀ (holotype *Compsobuthus sobotniki* Kovařík, 2003) (FKCP), leg. J. Šobotník.

HORMOZGAN PROVINCE MATERIAL EXAMINED. **Iran**, Hormozgan Province, Minab to Jask road, 26°04'49.3"N 57°17'57.2"E, 26 m a.s.l. (Locality No. HO-118), V.2009, 1♀ (FKCP), leg. Masihpour, Hayader and Habibzadeh; Jask to Bashagard road, 25°55'18.4"N 57°49'42.3"E, 274 m a.s.l. (Locality No. HO-121), V.2008, 1♂ (RRLS), leg. Masihpour, Bahrani & Habibzadeh; 29°44'11.5"N 57°47'37.4"E, 30 m a.s.l. (Locality No. HO-122), V.2008, 2♂2♀ (FKCP), leg. Masihpour, Bahrani & Habibzadeh; Jask to Minab road, 25°52'34.9"N 57°29'47.4"E, 46 m a.s.l. (Locality No. HO-126), V.2008, 1♀ (RRLS), leg. Masihpour, Bahrani & Habibzadeh; Jask to Minab road, 26°37'30.7"N 57°05'43"E, 18 m a.s.l. (Locality No. HO-129), V.2008, 2♀2 juvs. (FKCP), leg. Masihpour, Bahrani & Habibzadeh; Lengeh Port, 27°08'06"N 55°49'17.5"E, 12 m a.s.l. (Locality No. HO-142), V.2009, 1♂ (FKCP), leg. Masihpour, Hayader and Habibzadeh; 26°42'36.6"N 55°08'11"E, 20 m a.s.l. (Locality No. HO-151), XI.2008, 1♂ (FKCP), leg. Masihpour & Bahrani; 45 km to Khamir Port (Bandare Khamir), 26°50'41.2"N 55°22'06.9"E, 17 m a.s.l. (Locality No. HO-153),

XI.2008, 3♂1♀ (RRLS) 2♀1juv. (FKCP), leg. Masihpour, Hayder & Bahrani.

DISTRIBUTION: Iran, Sistan & Baluchistan (Birula, 1900: 368), Hormozgan (Kovařík & Ojanguren Affilastro, 2013: 212), and Kerman (Navidpour et al., 2011: 19) Provinces; Afghanistan (Vachon, 1959: 144); Pakistan (Kovařík & Fet, 2006b: 6).

Family Hemiscorpiidae Pocock, 1893

Hemiscorpius acanthocercus Monod et Lourenco, 2005 (Figs. 12, 24–27)

Hemiscorpius acanthocercus Monod & Lourenco, 2005: 874; Karataş et al., 2012: 118; Karataş & Gharkheloo, 2013: 20

TYPE LOCALITY AND TYPE REPOSITORY. Iran, Hormozgan Province, Abad-Geno, 38 km N Bandar Abbas; NHMW.

HORMOZGAN PROVINCE MATERIAL EXAMINED. **Iran**, Hormozgan Province, 27°34'45"N 57°07'28.6"E, 60 m a.s.l. (Locality No. HO-110), IV.2008, 1♀ (FKCP), leg. Masihpour, Bahrani & Habibzadeh; Minab to Sandrak road, 26°59'35.8"N 57°09'46.1"E, 58 m a.s.l. (Locality No. HO-111), IV.2008, 2♂ (RRLS), leg. Masihpour, Bahrani & Habibzadeh; 26°51'57.3"N 57°19'13.8"E, 112 m a.s.l. (Locality No. HO-113), IV.2008, 1♂ (FKCP), leg. Masihpour, Bahrani & Habibzadeh; Jask to Minab road, 25°52'34.9"N 57°29'47.4"E, 46 m a.s.l. (Locality No. HO-126), V.2008, 1♀ (FKCP), leg. Masihpour, Bahrani & Habibzadeh; Bandar Abbas to Lengeh Port road, 26°40'40.2"N 55°04'07.4"E, 17 m a.s.l. (Locality No. HO-150), XI.2008, 1♂ (FKCP), leg. Masihpour & Bahrani.

DISTRIBUTION: Iran, Hormozgan (Monod & Lourenco, 2005: 874) and Khoozestan (Karataş et al., 2012: 118) Provinces.

Hemiscorpius enischnochela Monod et Lourenco, 2005 (Fig. 12)

Hemiscorpius enischnochela Monod & Lourenco, 2005: 886

TYPE LOCALITY AND TYPE REPOSITORY. Iran, Hormozgan Province, ca. 115 km E Bandar Abbas; NHMW.

HORMOZGAN PROVINCE MATERIAL EXAMINED. **Iran**, Hormozgan Province, Deh Barez, 27°27'45"N 57°19'197"E, 350 m a.s.l., 16.-17.IV.2000, 1juv. (FKCP), leg. J. Šobotník.

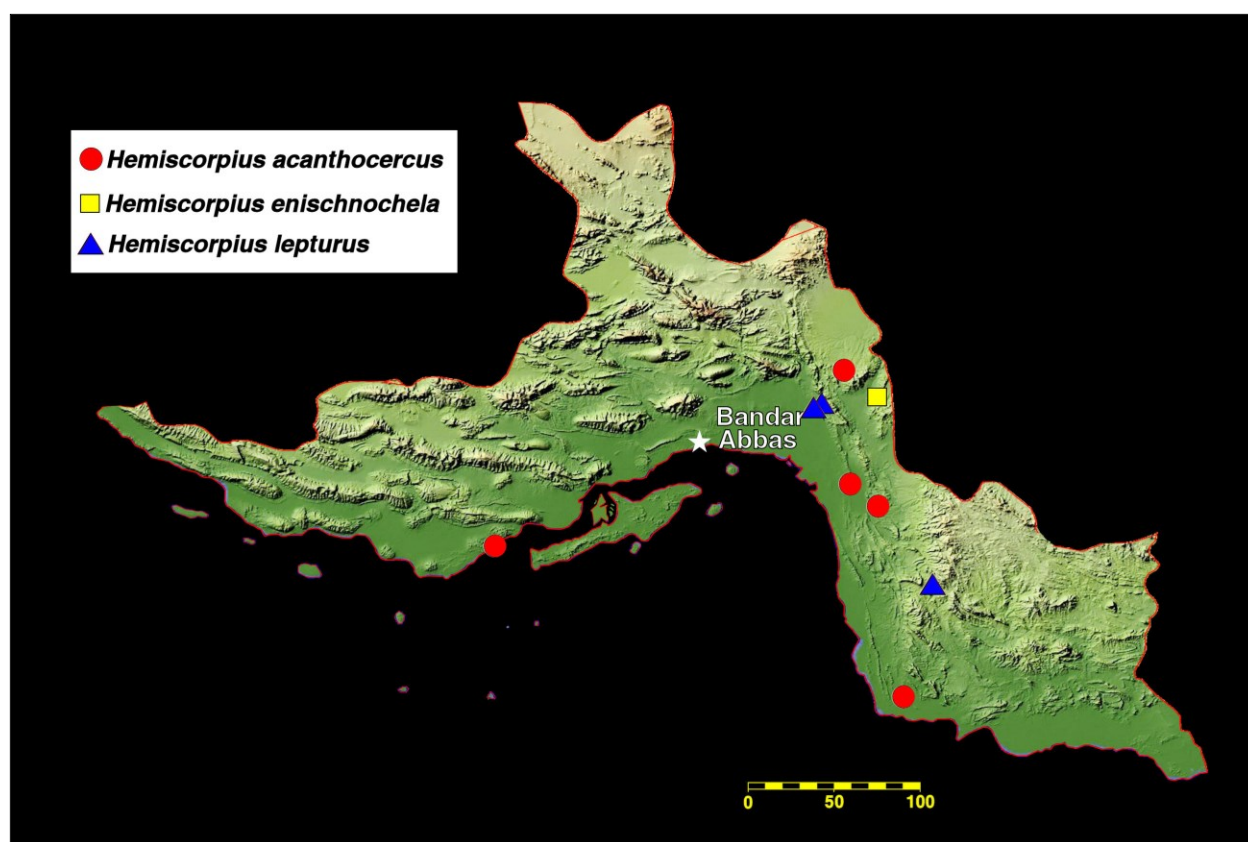


Figure 12: Map of Hormozgan Province showing distribution of *Hemiscorpius acanthocercus* Monod & Lourenco, 2005, *Hemiscorpius enischnochela* Monod & Lourenco, 2005 and *Hemiscorpius lepturus* Peters, 1861 collected in this study.

DISTRIBUTION: Iran, Hormozgan Province (Monod & Lourenco, 2005: 8).

Hemiscorpius lepturus Peters, 1861
(Figs. 8, 12, 28–31)

Hemiscorpius lepturus Peters, 1861a: 426, 8 figs.; Karsch, 1879: 15, 21; Birula, 1905a: 146; Birula, 1917: 215; Birula, 1918: 42, fig. 7; Weidner, 1959: 100; Pringle, 1960: 84, fig. 9; Khalaf, 1962: 2; Khalaf, 1963: 68; Vachon, 1966: 214; Habibi, 1971: 44; Farzanpay & Pretzmann, 1974: 217; Pérez Minocci, 1974: 36; Vachon, 1977: 213; Vachon, 1979: 59; Farzanpay, 1987: 141, 168; Farzanpay, 1988: 42; Simard & Watt, 1990: 441; Sissom, 1990: 75; El-Hennawy, 1992: 135; Kovařík, 1997: 48; Kovařík, 1998: 136; Fet, 2000: 429; Prendini, 2000: 44; Capes & Fet, 2001: 303; Monod & Lourenço, 2005: 902, figs. 1a–b, 16–21, 27e–f, 36; Akbari, 2007: 76, fig. p. 68; Navidpour et al., 2008a, figs. 20–21, 43, 107–110: 26; Navidpour et al., 2008b: 20, figs. 2, 5, 7, 24, 78–81; Navidpour et al., 2008c: 15, figs. 4, 12, 67–70; Navidpour et al., 2008d: 14, figs. 3, 6–7, 9, 14, 56–59; Kovařík, 2009: 19; Pirali-Kheirabadi et al., 2009: 12, figs. 3, 11, 49–52; Navidpour et al., 2010: 17; Navidpour et al., 2011:

19, figs. 7, 16, 65–68; Karataş et al., 2012: 118; Navidpour et al., 2012: 20, figs. 3–4, 13.

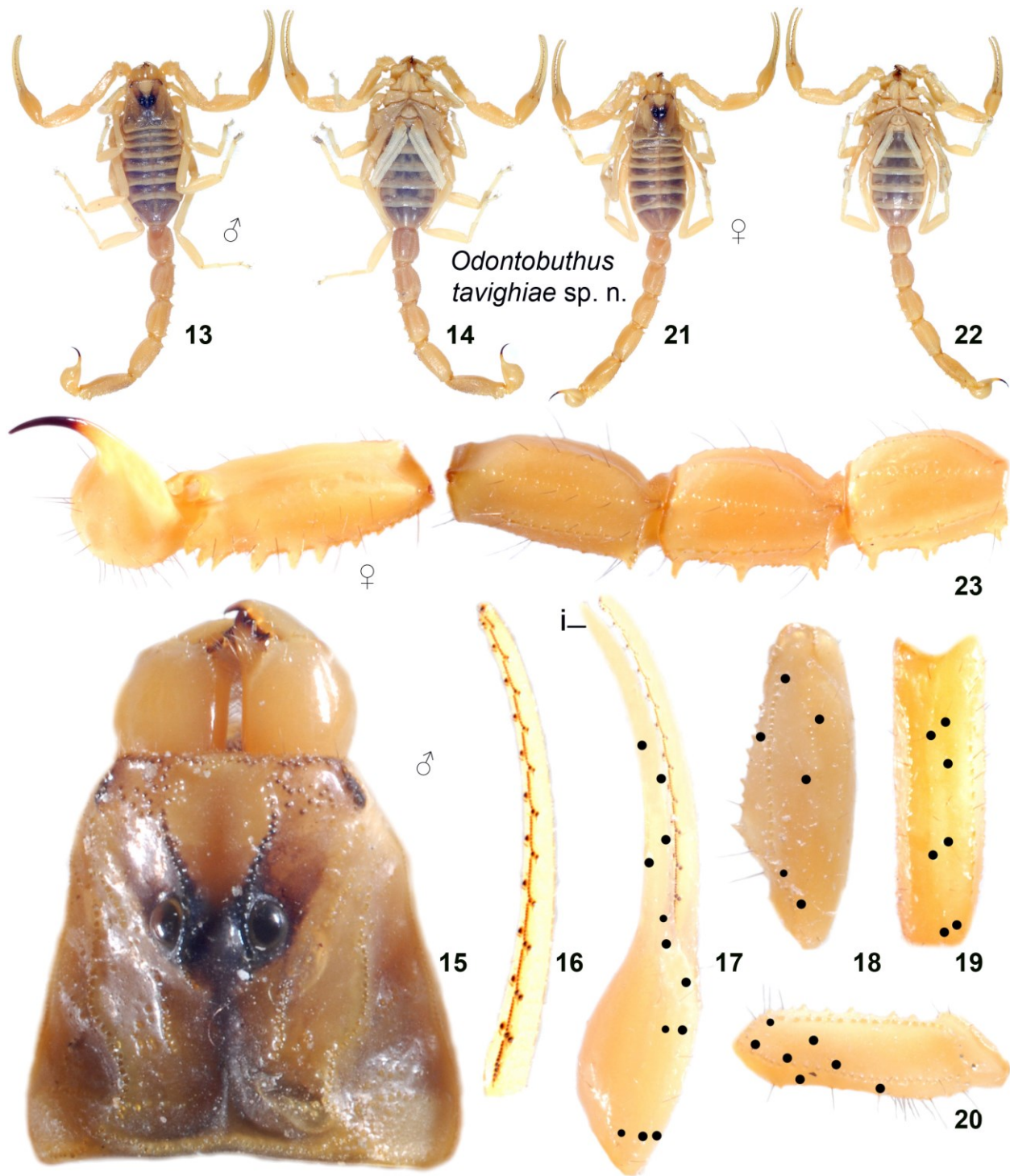
Hemiscorpius lepturus: Peters, 1861b: 511; Ausserer, 1880: 466; Kraepelin, 1899: 142; Werner, 1934: 276; Moritz & Fischer, 1980: 317; Kovařík, 2002: 14.

Hemiscorpio lepturus: Simon, 1880b: 29.

TYPE LOCALITY AND TYPE REPOSITORY. Iraq, “Mendeli bei Baghdad” (Mendeli near Baghdad); ZMHB.

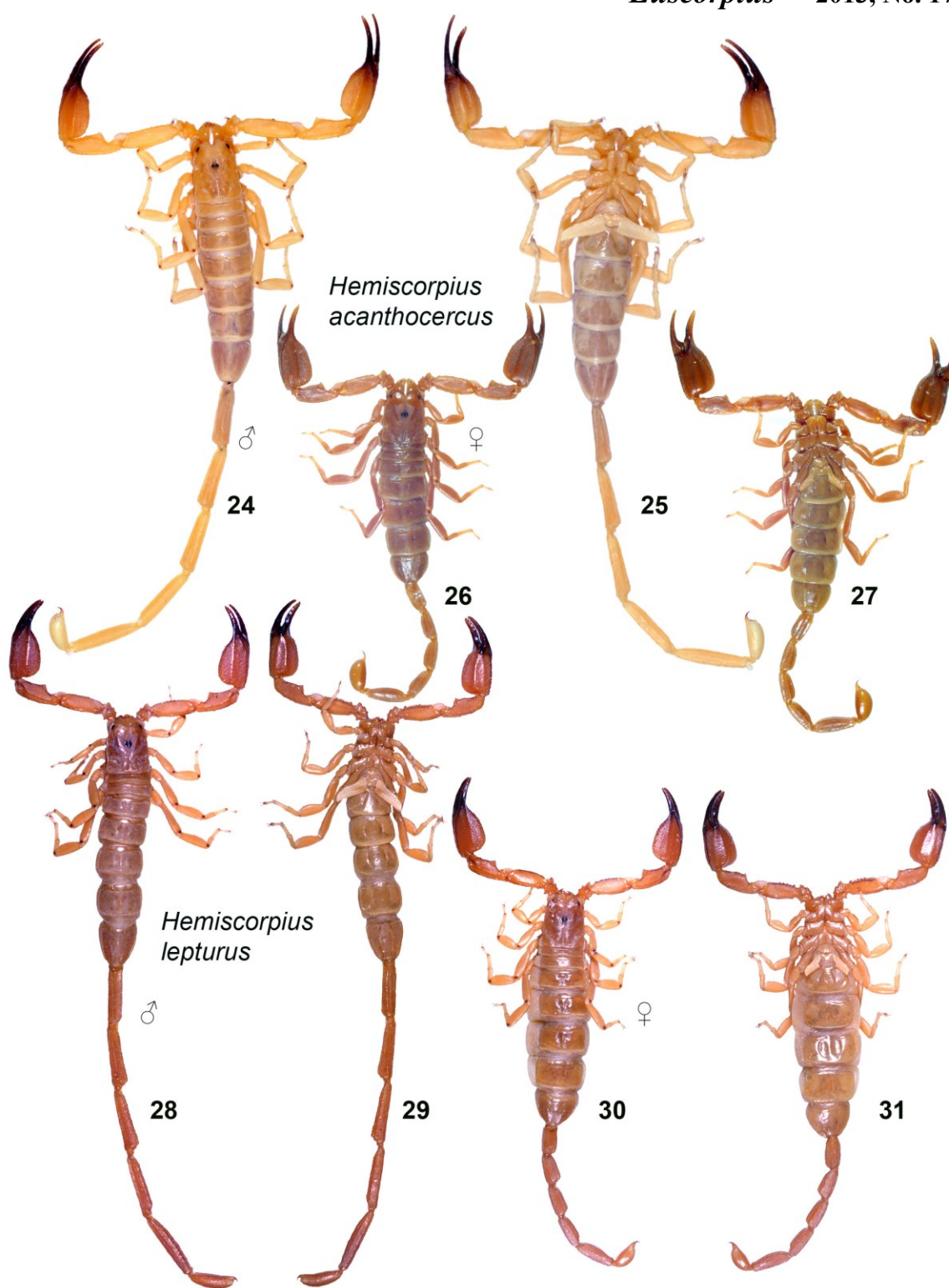
TYPE MATERIAL EXAMINED. Iraq, Mendeli bei Baghdad, 2♂2♀ (syntypes) (ZMHB 43a–d), leg. Petermann.

HORMOZGAN PROVINCE MATERIAL EXAMINED. **Iran**, Hormozgan Province, Beshagerd Mts., Davari Village, 26°27'N 57°38'E, 6–11.IV.2000, 1♂36♀21juvs. (FKCP), leg. V. Siniaev & A. Plutenko; 15 km S Minab, 25.IV.2002, 4♀1juv. (FKCP), leg. P. Kabátek; Minab to Radan road, 27°24'08"N 56°56'31.9"E, 75 m a.s.l. (Locality No. HO-116), IV.2008, 1♂ (FKCP), leg. Masihipour, Bahrani & Habibzadeh; Minab to Bandare Jask road, 27°25'03"N 56°59'42.3"E, 240 m a.s.l. (Locality No. HO-117), IV.2008, 3♂ (RRLS), leg. Masihipour, Bahrani & Habibzadeh.



Figures 13–23: *Odontobuthus tavighiae* sp. n.. **Figures 13–20:** Dorsal and ventral views, carapace and chelicerae (15), movable finger (16) and trichobothrial pattern (17–20), ♂ holotype. **Figures 21–23:** Dorsal and ventral views, II–V metasomal segments and telson lateral, ♀ paratype.

DISTRIBUTION: Iran, Ardabil (Karataş et al., 2012: 118), Fars, Hormozgan, Kohgiluyeh & Boyer Ahmad, Lorestan (Kovářík, 1997: 48), Bushehr, Ilam, Khoozestan (Farzanpay, 1987: 141; Monod & Lourenço, 2005: 902; Akbari, 2007: 76), Chahar Machal & Bakhtiyari (Pirali-Kheirabadi et al., 2009: 12), and Kerman (Navidpour et al., 2011: 19) Provinces; Iraq (Peters, 1861a: 426).



Figures 24–31: **Figures 24–25:** *Hemiscorpius acanthocercus* Monod et Lourenco, 2005, dorsal and ventral views, ♂ (81 mm), Iran, Hormozgan Province, Bandar Abbas to Lengeh Port road, 26°40'40.2"N 55°04'07.4"E, 17 m a.s.l (Locality No. HO-150), FKCP. **Figures 26–27:** *Hemiscorpius acanthocercus* Monod et Lourenco, 2005, dorsal and ventral views, ♀ (53 mm), Iran, Hormozgan Province, Jask to Minab road, 25°52'34.9"N 57°29'47.4"E, 46 m a.s.l. (Locality No. HO-126), FKCP. **Figures 28–29:** *Hemiscorpius lepturus* Peters, 1861, dorsal and ventral views, ♂ (72 mm), Iran, Khoozestan Province, Chogha Zanbil (zikkurat), 32°00'55"N 48°31'04"E, 68.5 m a.s.l. (Locality No. Ch-102), FKCP. **Figures 30–31:** *Hemiscorpius lepturus* Peters, 1861, dorsal and ventral views, ♀ (58 mm), Iran, Khoozestan Province, same locality as in Figs. 28–29. FKCP.

Family **Scorpionidae** Latreille, 1802

Nebo henjamicus Francke, 1980

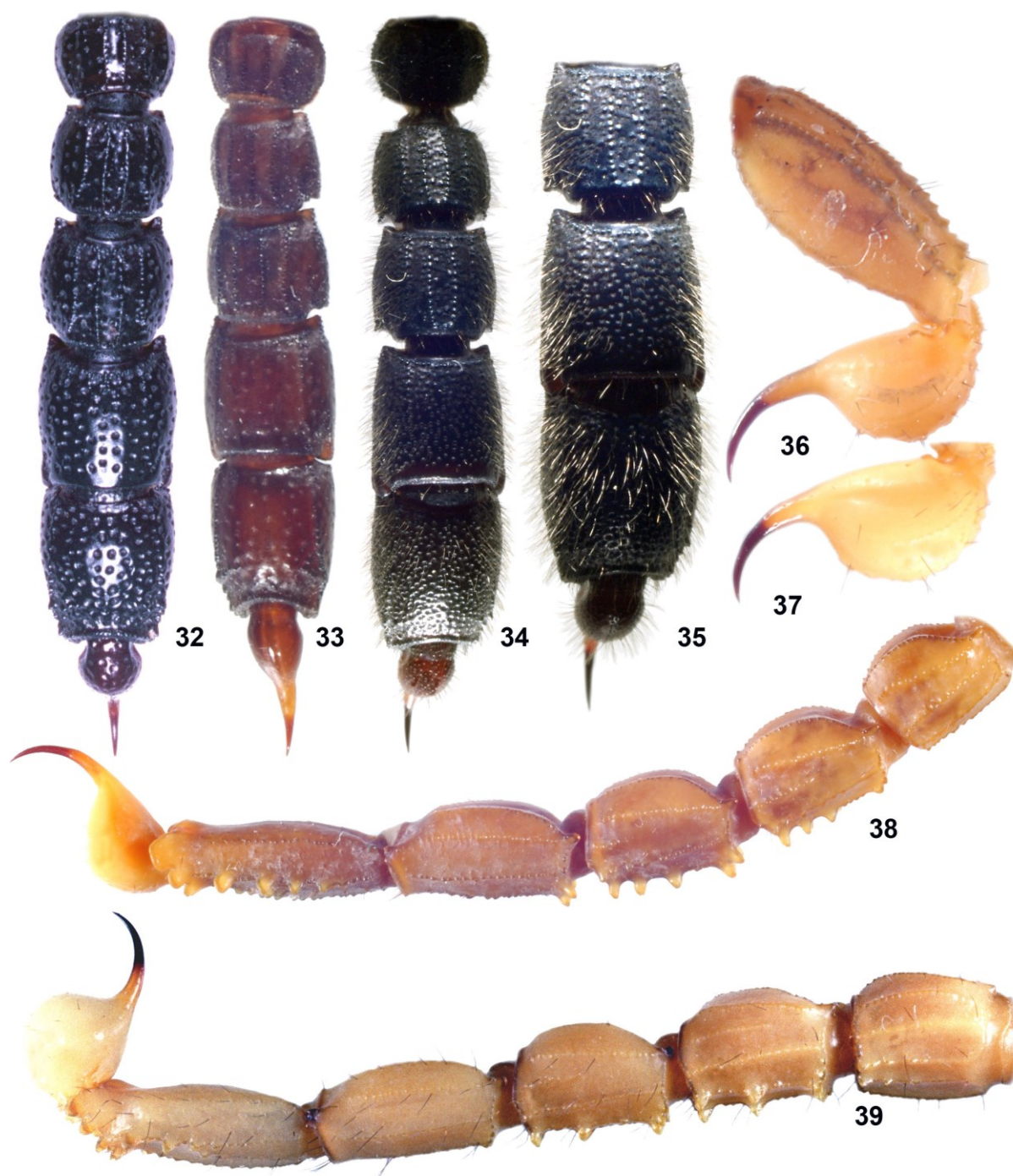
Nebo henjamicus Francke, 1980: 46; Vachon & Kinzelbach, 1987: 100; Kovařík, 1997: 50; Kovařík, 1998: 132; Sissom & Fet, 2000: 352.

TYPE LOCALITY AND TYPE REPOSITORY. Iran, Hormozgan Province, Persian Gulf, Henjam Island; BMNH.

COMMENTS. *N. henjamicus* was based on a unique adult male holotype 122 mm long, collected by R. A. Stephens in 1931 at Henjam Island, which is one of the 14 islands in the Persian Gulf belonging to the Hormozgan Province. Unfortunately, these islands could not be included in the project, and we have not been able to examine the holotype or any other specimens.

Key to scorpions of Hormozgan Province

1. Pedipalp patella without ventral trichobothria.....
..... **Buthidae** 5
– Pedipalp patella with ventral trichobothria.....
..... 2
2. Telson with subaculear tubercle. Lateroapical margins of leg tarsi shaped into rounded lobes.
..... *Nebo henjamicus* Francke, 1980
– Telson without subaculear tubercle. Lateroapical margins of leg tarsi straight. **Hemiscorpius** 3
3. Pedipalp patella with 3 ventral trichobothria. 4
– Pedipalp patella with 10–12 ventral trichobothria.
..... **H. enischnochela** Monod et Lourenco, 2005
4. Metasomal dorsal carinae bearing numerous strong spiniform granules.
..... **H. acanthocercus** Monod et Lourenco, 2005
– Metasomal dorsal carinae with sparse, much reduced and weaker spiniform granules, especially on the anterior segments. **H. lepturus** Peters, 1861
5. Carapace in lateral view distinctly inclined downward from median eyes to anterior margin. Total length less than 50 mm. **Orthochirus** 6
– Carapace in lateral view with entire dorsal surface horizontal or nearly so (possibly with a slight anterior decline)..... 8
6. Entire pedipalp, metasoma and telson densely hirsute (Figs. 34–35)...**O. stockwelli** (Lourenco et Vachon, 1995)
– Entire metasoma glabrous (short, thin setae may issue from punctae) (Figs. 32–33). 7
7. Fourth and fifth metasomal segments ventrally distinctly punctate (Fig. 32). Total length 30–42 mm. **O. farzanpayi** (Vachon et Farzanpay, 1987)
– Fourth and fifth metasomal segments ventrally shallowly punctate (punctuation on fourth metasomal segment completely absent in some males) (Fig. 33). Males range between 20 and 25 mm in length, and the females are up to 35 mm long...**Orthochirus varius** Kovařík, 2004
8. Cheliceral fixed finger with a single ventral denticle. **Razianus zarudnyi** (Birula, 1903)
– Cheliceral fixed finger with two ventral denticles. 9
9. Carapace granulated but without carinae.....
..... **Buthacus macrocentrus** (Ehrenberg, 1828)
– Carapace with carinae 10
10. Ventral carinae of second and third metasomal segments and ventral transverse carina of fourth segment armed with very strong teeth. **Odontobuthus** 11
– Ventral carinae of metasomal segments without very strong teeth. 13
11. Anal arch with two lateral lobes.....
..... **O. doriae** (Thorell, 1876)
– Anal arch with three lateral lobes. 12
12. Total length 60–70 mm. Movable finger of pedipalp with 13–14 rows of granules. Anal arch with three strong, wide and rounded lateral lobes (Fig. 39). First metasomal segment wider than long or as long as wide, at least in males.....
..... **O. bidentatus** Lourenço et Pézier, 2002 (Iran, Iraq).
– Total length 50–52.5 mm. Movable finger of pedipalp with 11–12 rows of granules (Fig. 16). Anal arch with three strong, long and conical lateral lobes (Fig. 23). First metasomal segment longer than wide in both sexes. **O. tavighiae** sp. n.
13. Dentate margin of pedipalp chela movable finger with 4 terminal granules (3 terminal and one basal terminal). 14
– Dentate margin of pedipalp chela movable finger with 5–7 terminal granules (4–6 terminal and one basal terminal)..... 15
14. Carinae of tergites project beyond posterior margin as distinct spiniform processes. Color yellow to brown. **Sassanidotus gracilis** (Birula, 1900)
– Carinae of tergites do not project beyond posterior margin as distinct spiniform processes. Color usually entirely black.....**Androctonus crassicauda** (Olivier, 1807)
15. Central median and posterior median carinae of carapace joined to form a continuous linear series of granules to posterior margin 16



Figures 32–39: Figures 32–35: Metasoma and telson of males of *Orthochirus* species, ventral views. Figure 32: *O. farzanpayi* (Vachon et Farzanpay, 1987), Iran, Khoozestan Province, Shushtar Arab Hasan Village (Locality. No. SH-100), FKCP. Figure 33: *O. varius* Kovařík, 2004, Iran, Hormozgan Province, Beshagerd Mts., Davari Village, 26°27'N 57°38'E, holotype, FKCP. Figures 34–35: *O. stockwelli* (Lourenco et Vachon, 1995), Iran, Hormozgan Province, Bandar Abbas to Lengeh Port road, 26°40'40.2"N 55°04'07.4"E, 17 m a.s.l. (Locality No. HO-150), FKCP. Figures 36–37: Telsons (in Fig. 36 with fifth metasomal segment) of females of *Mesobuthus* species. Figure 36: *M. eupeus persicus* (Pocock, 1899), Iran, Hormozgan Province, Bandare Jask to Bashagard road, 25°50'11.4"N 57°50'14.6"E, 146 m a.s.l. (Locality No. HO-119), FKCP. Figure 37: *M. phillipsii* (Pocock, 1889), Iran, Hormozgan Province, Parsian to Lamerd road, 27°05'52.3"N 53°23'23.2"E, 168 m a.s.l. (Locality No. HO-158), FKCP. Figures 38–39: Metasoma and telson of females of *Odontobuthus* species, ventral views. Figure 38: *Odontobuthus doriae* (Thorell, 1876), ♀, Iran, Zenjan Province, FKCP. Figure 39: *Odontobuthus bidentatus* Lourenço et Pézier, 2002, ♀, Iran, Bushehr Province, Bushehr to Dayer road, Jeirani Village, 27°50'47"N 51°45'33"E (Locality No. Bu-22), FKCP.

- Central median and posterior median carinae of carapace not joined to form a continuous linear series of granules to posterior margin 18
- 16. Total adult length less than 55 mm. *Compsobuthus* 17
- Total adult length more than 80 mm. *Iranobuthus krali* Kovařík, 1997
- 17. Rows of granules on movable finger without external granules. *C. persicus* Navidpour et al., 2008
- Rows of granules on movable finger with external granules. *C. plutenkoi* Kovařík, 2003
- 18. Total length 75–120 mm. Carinae of carapace not forming a lyre-shaped configuration. Ventrolateral carinae on the fifth metasomal segment with all granules more or less equal in size. Metasoma densely hirsute. *Hottentotta saulcyi* (Simon, 1880)
- Total adult length less than 65 mm. Carinae of carapace forming a lyre-shaped configuration. Ventrolateral carinae on the fifth metasomal segment with irregular granules. Metasoma with several setae only.... 19
- 19. Telson bulbous, especially in female (Fig. 37). *Mesobuthus phillipsii* (Pocock, 1889)
- Telson rather elongate in both sexes (Fig. 36). *Mesobuthus eupeus persicus* (Pocock, 1899)

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